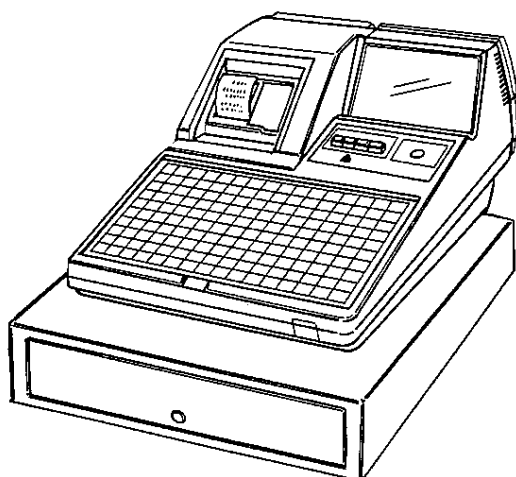


SHARP SERVICE MANUAL

CODE : 00ZER3100USME

A32 F3

ELECTRONIC CASH REGISTER



SECTION 1. PROGRAMMING

MODEL ER-3100

PRINTER : M-2640

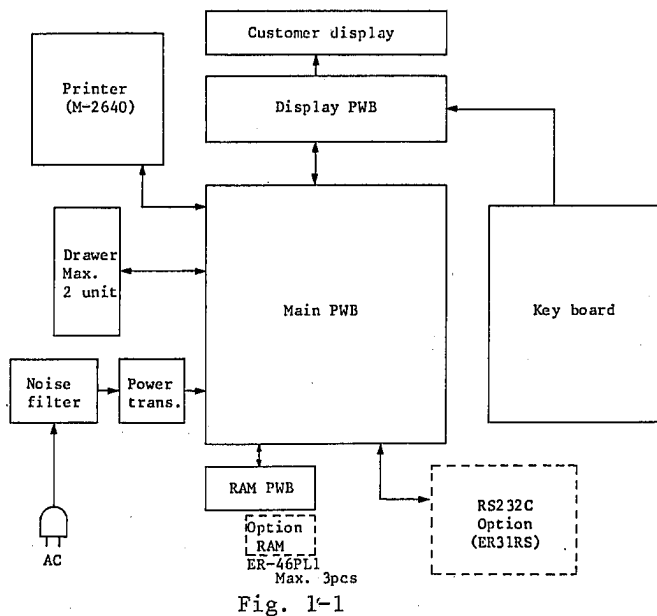
SRV KEY : LKGIM7113RCZZ

WATER PROOF ~~KEY~~ COVER DKIT-9322 RCZZ PG-29
 PRINTER CONTENTS

1. BLOCK DIAGRAM.....	1
2. SPECIAL SERVICE TOOLS	1
3. REFERENCE DOCUMENTS	1
4. SPECIFICATION	1
5. OPTIONS	7
6. SRV (Service) MODE	7
7. PGM1/PGM2 (Program) MODE	18
8. OP X/Z, X1, Z1/X2/Z2 MODE	26
9. SERVICE OPTION INSTALLATION PROCEDURE	27

SHARP CORPORATION

1. BLOCK DIAGRAM



2. SPECIAL SERVICE TOOLS

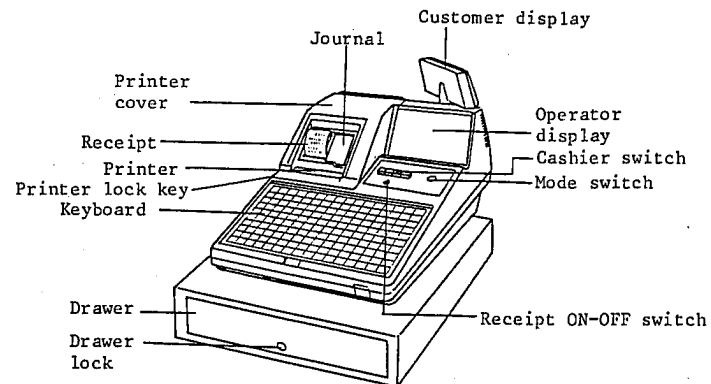
No.	Parts code	Description	Price rank
1	UKOGG0056CSZZ	Main PWB → RAM PWB expansion cable	BA
2	CKOG-6626RCZZ	Service battery	AX
3	QCNW-6952RCZZ	Loader cable	AY
4	UKOG-6651RCZZ	Loader loop back connector	AY
5	LKGIM7113RCZZ	Service key	AK

3. REFERENCE DOCUMENTS

- (1) Cash register basic manual
- (2) ER3100 service manual (00ZER3100SM-E)
SECTION 2. HARDWARE
- (3) M-2640 printer service manual (00ZM2640SM/-E)
- (4) ER3100 parts guide (00ZER3100PG-E)
SECTION 3. PARTS
- (5) ER-31RS service manual (00ZER31RSSM-E)

4. SPECIFICATION

4-1. Appearance



4-2. Rating

Power source	AC rating±10% 50/60Hz
Power consumption	40W
Dimensions	440(W)×507(B)×331(H)mm.
Weight	15.5kg (34.2 lbs.)
Operating temperature	0°C to 40°C (32°F to 104°F)

4-3. Keyboard

(1) Standard key layout (After master reset 1)

↑	↑	91	92	93	94	95	96	97	98	99	100	5	10		
RECEIPT	JOURNAL	81	82	83	84	85	86	87	88	89	90	4	9	NS	CONV
PRINT	RCPT	71	72	73	74	75	76	77	78	79	80	L2	L3	3	8
		61	62	63	64	65	66	67	68	69	70	PLU	L1	2	7
		51	52	53	54	55	56	57	58	59	60	PROMO #1	PROMO #2	1	6
		41	42	43	44	45	46	47	48	49	50	RA	PO	TAX @/FOR	CL
		31	32	33	34	35	36	37	38	39	40	TAX1 SHIFT	TAX2 SHIFT	7	8
		21	22	23	24	25	26	27	28	29	30	⊖1	⊖2	4	5
		11	12	13	14	15	16	17	18	19	20	%1	%2	1	2
		1	2	3	4	5	6	7	8	9	10	RFND	VOID	0	00

Fig. 4-2

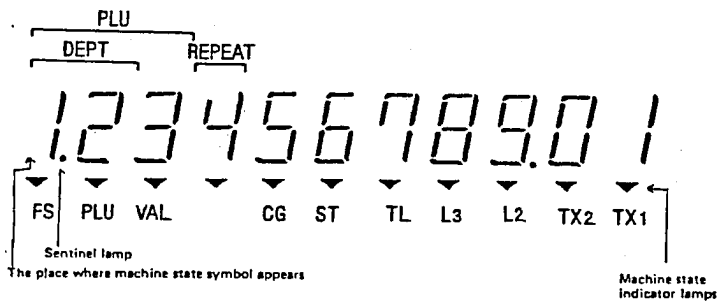
Key sheet code: PSHEZ6697RCZZ

(2) Key top name

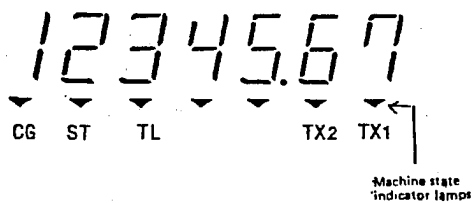
	Receipt paper feed key		Price lookup key		Conversion key (for currency conversion)
	Journal paper feed key		* } * } * } PLU's level shift keys (option)		Food stamp shift key
	Numeric keys				Food stamp tendered key
					Tax 1 and tax 2 shift keys
			} } Percent 1 and 2 keys		
	Decimal point key		Receipting key		Tax key
	Multiplication/ split-pricing key		Validation print key		Non-add/subtotal key
	Clear key		No-sale key		Merchandise subtotal key
	Department keys		} } Discount 1 and 2 keys		Tray subtotal key
					Cash/amount tendered key
	Promotion keys (Department for the promotion)		Refund key		2'nd cash key
			Void key		Check key
	Direct price lookup keys		Paid-out key		Charge 1, 2 and 3 keys
			Received-on-account key		

4-4. Display

(1) Operator display



(2) Customer display



(3) Description

The number of repeats is displayed from "2" and counted up with each repeat. When you've registered ten times, the display shows "0".

Example: (2 → 3 → 4 ----- 9 → 0 → 1 → 2 -----)

•Machine state symbols

- P : Appears in the eleventh place from the right during programming.
- E : Appears in the eleventh place when an error is detected.
- (Floating):
Appears when an entry is made into a minus department or PLU, and when a coupon, discount, reduction, or refund is made or corrected.
- O : Appears in the eleventh place when the tax-included subtotal is displayed or when the amount tendered is smaller than the sale amount.
- U : Appears in the eleventh place when the **VOID** key is depressed in the MGR mode indicating entry into the VOID mode. While your register is in the VOID mode, this symbol continues to be in the display except when department numbers, PLU numbers or tax-included subtotals are displayed.
- (Sentinel lamp):
Appears right below the eleventh place when the cash in drawer amount exceeds a programmed sentinel amount. The sentinel check is performed for the total Cash-In-Drawer.
- F : Appears in the eighth place when the change due is to be paid out in food stamps.
- C : Appears in the eleventh place (From the right) when the **CONV** key is pressed to calculate a subtotal in foreign currency.

•Cashier symbols

When the cashier is shift out and the new cashier is designated, cashier symbol A, B, D or appears in the tenth place (from the right) as shown below and continues to light until any item registration is made.

A : Cashier A b : Cashier B
D : Cashier D E : Cashier E

•Machine state indicator lamps

FS : Lights up when a department eligible for food stamps is entered.
PLU: Lights up each time a PLU item is entered.
VAL: Lights up when the machine is programmed for compulsory validation printing.
CG : Lights up whenever the change due appears in the display or when the total sale amount is negative.
ST : Lights up alone or together with other lamps when the register has computed sub-totals:
•The lamp lights up alone when the merchandise subtotal has been figured out.
•The "ST" lamp and the deficit symbol "D" light up together when the tax-included subtotal has been calculated.
•The "ST" and "TX1" lamps light up together when the taxable 1 subtotal has been calculated.
•The "ST" and "TX2" lamps light up together when the taxable 2 subtotal has been calculated.
•The "ST", "TX1" and "TX2" lamps light up together when the taxable 1 and 2 subtotal has been calculated.
•The "ST" and "FS" lamps light up when the food stamp eligible subtotal has been calculated.
TL : Lights up when a registration is finalized by pressing the [CA/AT], [CA2], [CHK], or [CH1] thru [CH3] without any amount tendered entry.
L2 : Lights up when a second level PLU is selected.
L3 : Lights up when a third level PLU is selected.
TX2: Lights up when the tax shift 2 key is depressed or a taxable 2 item is registered.
TX1: Lights up when the tax shift 1 key is depressed or a taxable 1 item is registered.

4-5. Mode switch

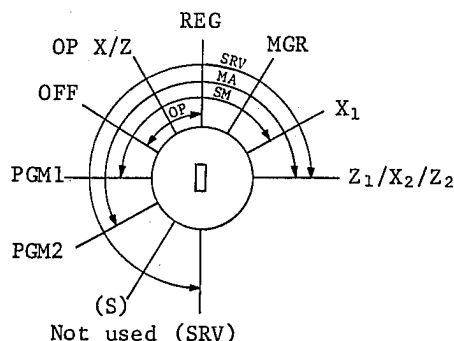


Fig. 4-5

Mode key

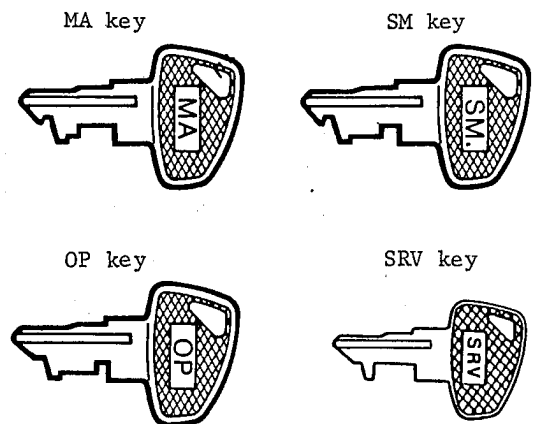


Fig. 4-6.

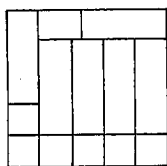
SRV: LKGIM7113RCZZ
MA : LKGIM7110RCZZ
SM : LKGIM7129RCZZ
OP : LKGIM7111RCZZ

4-6. Printer (M-2640)

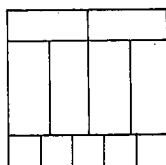
- | | |
|------------------------------------|--|
| 1. Printing system | : 2-station serial dot-matrix printer |
| 2. Printing direction | : Bidirectional |
| 3. Printing speed | : Max. 2.2 lines/sec. |
| 4. Font | : 7 × 7 (half-dot) |
| 5. Printing capacity | : 21 columns for the receipt and journal
47 columns for the validation form |
| 6. Dimensions of printed character | : 1.7(W) × 2.9(H) mm |
| 7. Character spacing | : 2.03 mm |
| 8. Line spacing | : 5.1 mm |
| 9. Receipt fast-feed speed | : Max. 25.7 lines/sec. |
| 10. Paper roll (DPAPR1006CSZZ) | : 44.5 ± 0.5 mm wide, max. 83 mm in diameter |
| 11. Validation form | : 130 mm or more wide, 60 mm or more high |
| 12. Ink ribbon | : Ribbon cassette PRBN-2320RCZZ |
| 13. Ribbon life | : 6 million characters |
| 14. Head life | : 40 million characters (in the case of 2 dots/1 wire/1 character) |
| 15. Reliability | : MCBF 2 million lines (except the head life) |
| 16. Stamp unit | : Porous rubber, 30(W) × 20(H) mm |
| 17. External dimensions | : 163.7(W) × 214.8(D) × 159.2(H) mm |

4-7. Drawer, lock

(1) Drawer

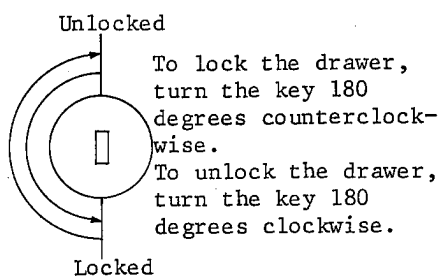


6B/6C
(for USA)



6B/5C
(for Canada)
(RB2/7, SB)

(2) Lock



4-8. MEMORYS

ITEM	Q'TY	TOTAL- IZE	COUN- TER	PRE- SET	NOTE
GT	3	13Dg+S			+ - NET
Z cou- nter	2		4Dg		
Depart- ment	20	9Dg+S	7Dg+S	8 ch 6 Dg 1 Dg 1 Dg 1 2 1 2 2 1	TEXT Unit price HALO HALO Max digit effective figure Sign +/- TAX sort 1/2 FS sort OPEN and/or PRESET SIS, SIF or Normal HASH
DEPT. TTL	4	9Dg+S		6 ch	TEXT
PLU	100 (999)	9Dg+S	7Dg+S	8 ch 6 Dg 1 2 1 1 2 Dg 2 Dg	TEXT Unit price Sign +/- TAX sort 1/2 FS sort Inhibit or provide DEPT. number GROUP
NET	3	9Dg+S		6 ch	TEXT
VOID	4	9Dg+S	5Dg+S	6 ch 1 1 1	VOID in Reg mode, two kind of VOID TTL in VOID mode and HASH VOID TEXT VOID mode Exist/Not Inhibit past item void in Reg/Not Inhibit last item void in Reg/Not
REFUND	2	9Dg+S	5Dg+S	6 ch 1	Normal REFUND and HASH REFUND TEXT Inhibit RF in Reg/Not

ITEM	Q'TY	TOTAL- IZE	COUN- TER	PRE- SET	NOTE
P/O	1	9Dg+S	5Dg+S	6 ch 1 Dg 1 Dg 1	TEXT HALO HALO Max digit effective figure Validation enforced/ optional
R/A	1	9Dg+S	5Dg+S	6 ch 1 Dg 1 Dg 1	TEXT HALO HALO Max digit effective figure Validation enforced/ optional
TX'BLE SALES	2	9Dg+S		6 ch	TEXT
TAX TTL	9			112 step 6 Dg X2 1 bit (srv)	for 2 Tables for % Tax Tax delete Available/ Not
MANUAL TAX	1			1 Dg 1 Dg	HALO HALO Max digit effective figure
CASH	2	9Dg+S	5Dg+S	6 ch 1 Dg 1 Dg 1 1 1 1 bit (srv)	TEXT HALO (CA2 only) HALO Max digit effective figure Validation enforced/ optional Amount tendering Compulsory/ optional Subtotal Compulsory/ Not

ITEM	Q'TY	TOTAL- IZE	COUN- TER	PRE- SET	NOTE
CHECK	1	9Dg+S	5Dg+S	6 ch 1 Dg 1 Dg 1 1 1 1 bit (srv)	TEXT HALO HALO Max digit effective figure Over tender Disallowed/ Allowed Validation enforced/ optional Amount tenderring Compulsory/ optional Subtotal Compulsory/ Not
CHARGE	3	9Dg+S	5Dg+S	6 ch 1 Dg 1 Dg 1 1 1 1 bit (srv)	TEXT HALO HALO Max digit effective figure Over tender Disallowed/ Allowed Validation enforced/ optional Amount tenderring Compulsory/ Inhibit Subtotal Compulsory/ Not
(-)	2	9Dg+S	5Dg+S	6 ch 1 Dg 1 Dg 1 2 1	TEXT HALO HALO Max digit effective figure Vender/Store TAX sort 1/2 FS sort
%	2	9Dg+S	5Dg+S	6 ch 1 1 4 Dg 2 1 1 1	TEXT Sbt1/Item Sign +/- % rate TAX sort 1/2 FS sort Open Preset
CID	1	9Dg+S			

ITEM	Q'TY	TOTAL- IZE	COUN- TER	PRE- SET	NOTE
CHK Change	1	9Dg		8 Dg	HALO
CP PLU	1	9Dg+S	5Dg+S		
FS Sale	1	9Dg	5Dg		
FS Change	1	9Dg			
FS Tax for Give	2	9Dg			
No sale	1		5Dg	1 bit (srv)	Seperate/Cash
Custom- er	1		5Dg		
Valida- tion	1		5Dg		
Curren- cy conv.	1	9Dg		6 ch 6 Dg	TEXT conv. rate
TRAY ST	1		5Dg+S		
Long time open drawer			5Dg		
Perio- dic	1	9Dgx()	5Dgx()		
Conse- cutive no.	1		4Dg		
Machine no.	1			3 Dg	
CASHIER SALES P/O R/A REFUND VOID (-) % Long time open draw- er Cur- rency conv.	4	9Dg+S 9Dg+S 9Dg+S 9Dg+S 9Dg+S 9Dg+S 9Dg+S 9Dg+S (x2) (x2) 9Dg+S (x2)	5Dg+S 5Dg+S 5Dg+S 5Dg+S 5Dg+S 5Dg+S 5Dg+S 5Dg+S (x2) (x2) 5Dg+S	8 ch	Name

ITEM	Q'TY	TOTAL- IZE	COUN- TER	PRE- SET	NOTE
FSID CHARGE		9Dg+S 9Dg+S (x3)	5Dg+S (x3)		
CHECK CID		9Dg+S 9Dg+S	5Dg+S		
LOGO TEXT	6			8 ch	TEXT

5. OPTIONS

Name	Model name	Country			Note
		USA	CANADA	other	
RS-232C inter- face	ER-31RS	○	○	○	
Expan- sion RAM	ER-46PL1	○	○	○	PLUs 100+ 999, cashier media report Bottle deposit 8K bytes x 3 chips
Preset loader	ER-52CB	○	○	○	ECR to ECR
	ER-67LC	-	-	○	ECR to PC
	ER-52LC	○	○	-	
	ER-01FD	○	○		ECR to FD
Remote drawer	ER-34DW3	○	-	-	Single unit
	ER-34DW5	-	○	-	
	ER-34DW7	-	-	○	
Barrel lock key	ER-25CL	○	○	○	30 dif- ferent keys
Mode switch	ER-25MD1 to ER-25MD5	○	○	-	100 dif- ferent keys
Battery	ER-30BT	-	-	○	
Coin case	ER-33CC	○	-	○	
	ER-33CC1	-	○	○	
	ER-38CC	-	-	○	
Coin case cover	ER-33CV	-	-	○	
	ER-33CV1	-	○	○	
	ER-38CV1	-	-	○	
	to ER-38CV5	-	-	○	

Refer to installation manual How to install.

Service route options

Name	Code	Note
Journal near-end sensor	DKIT-8226RCZZ	
Validation sensor	DKIT-8227RCZZ	
Drawer open sensor	DKIT-8331RCZZ	
Water-Proof switch cover	GCOVB6872RCZZ	For 4-stay down cashier SW
	GCOVB6873RCZZ	For barrel lock cashier SW
Mode key grip cover	LKGIM7126RCZZ	Only for OP key
Water-Proof printer cover	DKIT-8322RCZZ	

For installation, refer to chapter 9.

6. SRV(Service) MODE

The SRV key is used for operating in the SRV mode.

6-1. Program reset (Program Loop Reset)

Operation is returned to the program initial state with the contents of the memory retained, when the program execution is scrambled.

Procedure

- 1) Disconnect the AC cord from the wall outlet.
- 2) Set the MODE switch to the SRV position.
- 3) Connect the AC cord to the wall outlet.

*** SRV.RESET ***

6-2. Master reset (All memory clear)

There are two methods for the way of master reset.

• MRS-1

At the same time the memory contents are cleared, the machine is initialized to the standard setup including the keyboard function. For the standard keyboard layout, refer to page 1.

Procedure

- 1) Disconnect the AC cord from the wall outlet.
- 2) Set the MODE switch to the SRV position.
- 3) Connect the AC cord to the wall outlet, while depressing the JOURNAL FEED key.

• MRS-2

At the same time the memory contents are cleared, the machine is initialized to the standard setup excluding the keyboard function. In this event, nothing exists on the keyboard except the journal feed and receipt feed keys.

Procedure

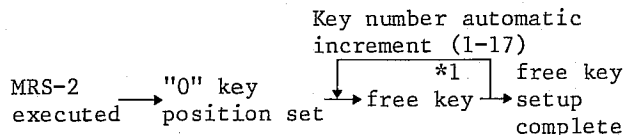
- 1) Disconnect the AC cord from the wall outlet.
- 2) Set the MODE switch to the SRV position.
- 3) Connect the AC cord to the wall outlet, while depressing the RECEIPT FEED key and the JOURNAL FEED key.

Key position assignment:

After the execution of MRS-2, only the RECEIPT FEED and JOURNAL FEED keys can remain effective on key assignment.

Any key can be assigned on any key position on the keyboard.

<Key setup procedure>



NOTES:

- *1: Push the key on the position to be assigned.
With this, the key of the key number on display is assigned to that key position.

Key number	Key name	Key number	Key name
1	Numeric key "0"	9	Numeric key "8"
2	Numeric key "1"	10	Numeric key "9"
3	Numeric key "2"	11	Numeric key "00"
4	Numeric key "3"	13	Decimal point key
5	Numeric key "4"	14	CL key
6	Numeric key "5"	15	@/FOR key
7	Numeric key "6"	16	#/SBTL key
8	Numeric key "7"	17	CA/AT key

*** MRS.RESET ***

6-3. Service mode programming

The following are the key operation required for programming.

XXX → [.] → @/FOR → (A)(B)(C)(D) → CA/AT
(4 digits max.)

Details of (A)(B)(C)(D) will be discussed at each item description.

Key entry without depression of [.] key will affect the programmed contents.

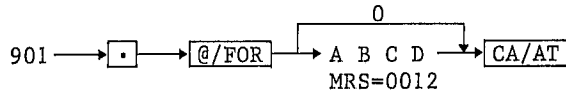
(List of service mode program)

Job#	Item
901	PLU option, change of code display at PLU entry, PLU ZERO skip, DEPT ZERO skip, Number of DEPT
902	Drawer assignment, cashier transaction report Yes/No, Operator sales total includes tax Yes/No, Number of cashier, Bottle deposit, Void transaction Yes/No, Loader transfer speed
903	Fraction treatment, split pricing, drawer close operation Compulsory/Noncompulsory, Singaporean Tax Yes/No, Tax delete Enable/Disable, Error method, Key catch sound non-add code, Manual tax Enable/Disable
904	Printing GT1, GT2, GT3 on Z report, Printing GT3 on X report, Printing TAX1, TAX2 on X/Z report
905	Printing Check/Charge total, Manual TAX on X/Z report Drawer open in credit sale, Past item void Enable/Disable, HASH DEPT programming, Key buffer clear, validation format, Printing of cashier name Yes/No, Date format, Amount symbol
906	Tax payment by FS, #/SBTL key, Compulsory/Noncompulsory, Non-add entry compulsory at the DEPT/PLU entry, Number of non-add code, RS232C Yes/No, TRAY SBTL is zero, Logo format
910,911	Z-counter setting
912,913	GT1 setting
914,915	GT2 setting
930	Secret code setting
950,951	Free key setting
996,997,998	SIO Application

(Programming)

<Job code #901>

Key operation



#901-A PLU option setting

PLU	Key entry
MAX100 (standard)	0
MAX322 (ER46PL1 x 1)	1
MAX678 (ER46PL1 x 2)	2
MAX999 (ER46PL1 x 3)	3

- #901-B
1. Change of code display at PLU entry DPT/PLU code.
 2. PLU zero skip Yes/No
 3. Department zero skip Yes/No

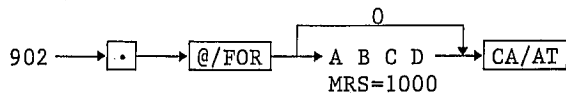
901-B

Code display at PLU entry	Zero skip PLU	Zero skip Dept	Key entry
DEPT code	Skip	Skip	0
		No skip	1
	No skip	Skip	2
		No skip	3
PLU code	Skip	Skip	4
		No skip	5
	No skip	Skip	6
		No skip	7

#901-C, D Number of DEPARTMENT
C, D =01 ~ 20

<Job code #902>

Key operation:



#902-A

Drawer assignment to each operator	Key entry
No drawer	0
(A,B,D,E)=1	1
(A,B)=1 (D,E)=2	2
(A)=1 (B,D,E)=2	3
(A)=1 (B)=2 (D,E)=Not open	4

- #902-B
1. Long cashier report with media totals Yes/No (ER46PL1 lpc, Required)
 2. Cashier sales total includes tax Yes/No
 3. Number of cashier 2 cashiers/4 cashiers

902-B

Long cashier report enable	Cashier sales total includes tax	Number of cashier	Key entry
No	No	4 cashiers	0
		2 cashiers	1
	Yes	4 cashiers	2
		2 cashiers	3
Yes	No	4 cashiers	4
		2 cashiers	5
	Yes	4 cashiers	6
		2 cashiers	7

- #902-C
1. Bottle deposit Enable/Inhibit
 2. Periodic consolidation X2/Z2 Enable/Inhibit
 3. Void mode Enable/Inhibit

Bottle deposit *	X2/Z2	Void mode	Key entry
Enable	Enable	Enable	0
		Inhibit	1
	Inhibit	Enable	2
		Inhibit	3
Inhibit	Enable	Enable	4
		Inhibit	5
	Inhibit	Enable	6
		Inhibit	7

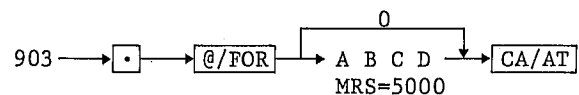
*ER-46PL1 REQUIRED

#902-D Loader/Dumper transfer speed

Transfer speed	Key entry
9600 BPS	0
4800 BPS	1
2400 BPS	2
1200 BPS	3
600 BPS	4

<Job code #903>

Key operation



#903-A

Fractional disposal	Key entry
Round down	0
Round off	5
Round up	9

- #903-B
1. Split pricing quantity fraction of set/Whole unit
 2. Drawer close operation Compulsory/Noncompulsory
 3. Singaporean tax system Yes/No

903-B

Split pricing quantity	Compulsory drawer closed	Singaporean tax system	Key entry
Whole unit	No	No	0
		Yes	1
	Yes	No	2
		Yes	3
Fraction of set	No	No	4
		Yes	5
	Yes	No	6
		Yes	7

- #903-C 1. Tax delete Enable/Disable
2. Keyboard lock or not on error Yes/No
3. Catch sound Yes/No

Tax delete	Keyboard lock on error	Key catch sound	Key entry
Disable	No	Yes	0
		No	1
	Yes	Yes	2
		No	3
Enable	No	Yes	4
		No	5
	Yes	Yes	6
		No	7

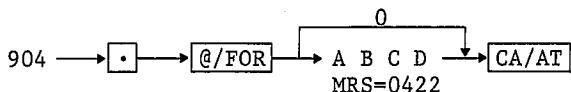
- #903-D 1. Entry of non-add code Enable/Disable
2. No sale entry after non-add code printing Enable/Disable
3. Manual tax Enable/Disable

903-D

Allow entry of non-add code	No sale after non-add code entry	Manual tax entry	Key entry
Yes	Enable	Enable	0
		Disable	1
	Disable	Enable	2
		Disable	3
No	Enable	Enable	4
		Disable	5
	Disable	Enable	6
		Disable	7

<Job code #904>

Key operation



- #904-A 1. Printing of GT1 on Z report Yes/No
2. Printing of GT2 on Z report Yes/No
3. Printing of GT3 on Z report Yes/No

904-A

GT1 print	GT2 print	GT3 print	Key entry
Yes	Yes	Yes	0
		No	1
	No	Yes	2
		No	3
No	Yes	Yes	4
		No	5
	No	Yes	6
		No	7

- #904-B 1. Printing of GT1 on X report Yes/No
2. Printing of NET subtotal on X/Z report Yes/No

904-B

GT1 print on X report	Net subtotal	Key entry
Yes	Print	0
	Skip	1
No	Print	4
	Skip	5

- #904-C 1. Printing of taxable 1 on X/Z report Yes/No
2. Printing of gross tax 1 and refund tax 1 totals on X/Z report Yes/No
3. Printing of NET tax 1 on X/Z report Yes/No

904-C

Taxable 1 print	Gross tax 1 and Refound tax 1 total print	Net tax 1 print	Key entry
Yes	Yes	Yes	0
		No	1
	No	Yes	2
		No	3
No	Yes	Yes	4
		No	5
	No	Yes	6
		No	7

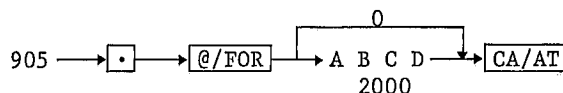
- #904-D 1. Printing of taxable 2 total on X/Z report Yes/No
2. Printing of gross tax 2 and refund tax 2 totals on X/Z report Yes/No
3. Printing of NET tax 2 total on X/Z report Yes/No

904-D

Taxable 2 print	Gross tax 2 and Refound tax 2 total print	Net tax 2 print	Key entry
Yes	Yes	Yes	0
		No	1
	No	Yes	2
		No	3
No	Yes	Yes	4
		No	5
	No	Yes	6
		No	7

<Job code #905>

Key operation



- #905-A
1. Printing of check/change total on X/Z report Yes/No
 2. Printing of gross manual tax and refund manual tax totals on X/Z report Yes/No
 3. Printing of NET manual tax total on X/Z report Yes/No

905-A

Check/change total print	Gross manual TAX and Refund manual TAX total print	NET manual tax total print	Key entry
Yes	Yes	Yes	0
		No	1
	No	Yes	2
		No	3
No	Yes	Yes	4
		No	5
	No	Yes	6
		No	7

- #905-B
1. Drawer open in credit sale Yes/No
 2. Past item void Enable/Disable
 3. HASH Dept. programming allowed in PGM 2./Not.

905-B

Allow HASH Dept. programming	Allow drawer open in credit sale	Allow past item void	Key entry
No	Yes	Enable	0
		Disable	1
	No	Enable	2
		Disable	3
Yes	Yes	Enable	4
		Disable	5
	No	Enable	6
		Disable	7

- #905-C
1. Clear key buffer after receipt generation Yes/No
 2. Validation printing format Date/Consecutive No. & machine No.

Clear key buffer	Validation format	Key entry
No.	Date	0
	CC# + Machine#	1
Yes	Date	2
	CC# + Machine#	3

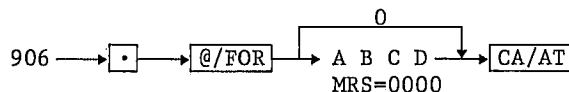
- #905-D
1. Printing of cashier name on header Yes/No
 2. Date format MMDDYY/DDMMYY
 3. Amount leading symbol \$/*

905-D

Cashier name	Date format	Amount leading symbol	Key entry
Print	MMDDYY	\$	0
		*	1
	DDMMYY	\$	2
Skip	MMDDYY	*	3
		\$	4
	DDMMYY	*	5
		\$	6
		*	7

<Job code #906>

Key operation



- #906-A Tax payment by food stamp
- 0: No food stamp function
 - 1: Allow tax to be paid by food stamps
 - 2: Food stamp tax must be paid by cash
 - 3: Food stamp tax forgiveness

- #906-B
1. #/ST depression before finalizing a transaction Compulsory/Noncompulsory
 2. # key entry at the time of DPT/PLU entry Compulsory/Noncompulsory
 3. Non-add code 8 digits/14 digits

906-B

Subtotal key compulsory	Non-add entry at DEPT/PLU registration	Number of non-add digit	Key entry
Non-compulsory	Non-compulsory	8 digits	0
		14 digits	1
	Compulsory	8 digits	2
		14 digits	3
Compulsory	Non-compulsory	8 digits	4
		14 digits	5
	Compulsory	8 digits	6
		14 digits	7

- #906-C
1. Compulsory TRAY total before finalization
 2. RS232C (ER31RS) Selected/Not selected
 3. Cashier key 4-stay down/ER25CL

906-C

TRAY total before finalization	RS232C (ER31RS)	Cashier key	Key entry
Non-compulsory	No	4-stay down	0
		ER25CL	1
	Yes	4-stay down	2
		ER25CL	3
Compulsory	No	4-stay down	4
		ER25CL	5
	Yes	4-stay down	6
		ER25CL	7

#906-D Logo format

Logo message format	Key entry
3 lines under stamp (1)	0
Stamp only (2)	1
Logo 1 line (3)	2
Logo 2 lines (4)	3
Logo 3 lines (5)	4
Logo 4 lines (6)	5
Logo 5 lines (7)	6
Logo 6 lines (8)	7

```

YOUR RECEIPT
THANK YOU
ABCDEFGHIJ
KLMNOPQRST
UVWXYZ1234

01/01/00 1:05AM
DPT.O1 $1.00
CASH $1.00
000#0017 A
    
```

(1)

```

YOUR RECEIPT
THANK YOU
01/01/00 1:05AM
DPT.O1 $1.00
CASH $1.00
000#0016 A
    
```

(2)

```

YOUR RECEIPT
THANK YOU
01/01/00 1:04AM
000#0014 A
DPT.O1 $1.00
CASH $1.00
ABCDEFGHIJ
    
```

(3)

```

YOUR RECEIPT
THANK YOU
01/01/00 1:04AM
000#0013 A
DPT.O1 $1.00
CASH $1.00
ABCDEFGHIJ
KLMNOPQRST
    
```

(4)

```

YOUR RECEIPT
THANK YOU
01/01/00 1:03AM
000#0012 A
DPT.O1 $1.00
CASH $1.00
ABCDEFGHIJ
KLMNOPQRST
UVWXYZ1234
    
```

(5)

```

YOUR RECEIPT
THANK YOU
01/01/00 1:03AM
000#0011 A
DPT.O1 $1.00
CASH $1.00
ABCDEFGHIJ
KLMNOPQRST
UVWXYZ1234
!!@!?"#$%&'*
    
```

(6)

```

YOUR RECEIPT
THANK YOU
01/01/00 1:02AM
000#0010 A
DPT.O1 $1.00
CASH $1.00
ABCDEFGHIJ
KLMNOPQRST
UVWXYZ1234
!!@!?"#$%&'*
>*+,-./:;=<
    
```

(7)

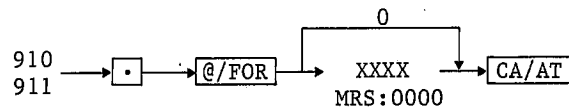
```

YOUR RECEIPT
THANK YOU
01/01/00 1:02AM
000#0009 A
DPT.O1 $1.00
CASH $1.00
ABCDEFGHIJ
KLMNOPQRST
UVWXYZ1234
!!@!?"#$%&'*
>*+,-./:;=<
=>?@!?"#$%&'*
    
```

(8)

<Job code #910, 911> Z1, Z2 counter setting

Key operation

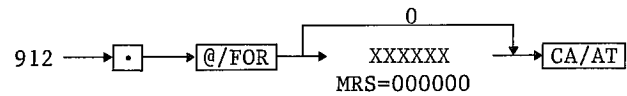


910: Z1 counter

911: Z2 counter

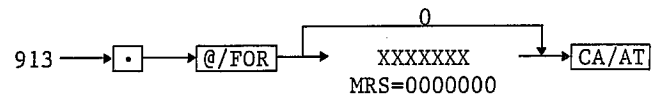
<Job code #912> GT1 upper 6 digits setting

Key operation



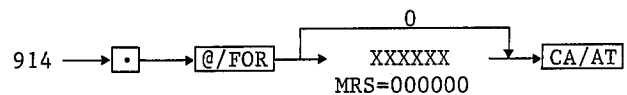
<Job code #913> GT1 Lower 7 digits setting

Key operation



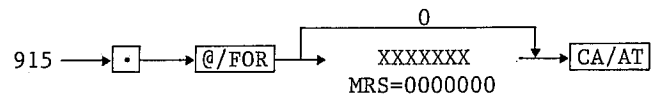
<Job code #914> GT2 upper 6 digits setting

Key operation



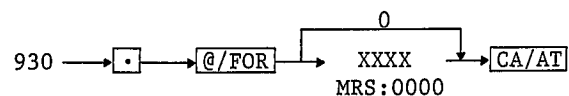
<Job code #915> GT2 Lower 7 digits setting

Key operation



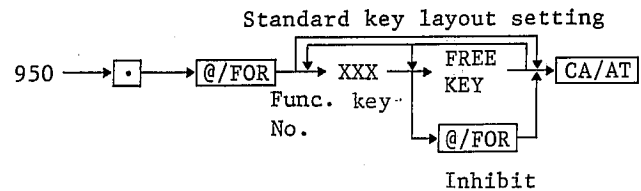
<Job code #930> Secret code setting of PGM 2 mode

Key operation

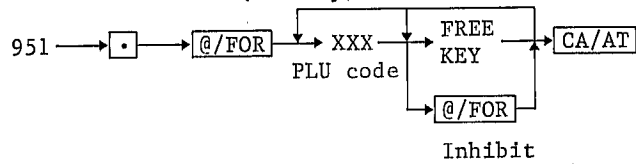


<Job code #950> Free key layout setting 1

Key operation



<Job code #951> Free key layout setting 2
(PLU key)



Function key No.

Func. key No.	Key name	Func. key No.	Key name	Func. key No.	Key name
1	0 KEY	18	(-) 1	35	FSTND
2	1 KEY	19	(-) 2	36	R/A
3	2 KEY	20	%1	37	P/O
4	3 KEY	21	%2	38	NS
5	4 KEY	22	TAX	39	PRINT
6	5 KEY	23	TAX 1ST	40	RCPT
7	6 KEY	24	TAX 2ST	41	CONV
8	7 KEY	25	FS SFT	42	L1
9	8 KEY	26	RFND	43	L2
10	9 KEY	27	VOID	44	L3
11	00 KEY	28	MDSEST	45-64	DPT.01-20
12	.	29	TRAYST		
13	CL	30	CA2		
14	@/FOR	31	CHK	1-100	PLU001-100
15	#/SBTL	32	CH1		
16	CA/AT	33	CH2		
17	PLU#	34	CH3	999	INHIBIT

Key position number

↑ RECEIPT	↑ JOURNAL	28	38	48	58	68	78	88	98	108	118	128	138	148	158
9	18	27	37	47	57	67	77	87	97	107	117	127	137	147	157
8	17	26	36	46	56	66	76	86	96	106	116	126	136	146	156
7	16	25	35	45	55	65	75	85	95	105	115	125	135	145	155
6	15	24	34	44	54	64	74	84	94	104	114	124	134	144	154
5	14	23	33	43	53	63	73	83	93	103	113	123	133	143	153
4	13	22	32	42	52	62	72	82	92	102	112	122	132	142	152
3	12	21	31	41	51	61	71	81	91	101	111	121	131	141	151
2	11	20	30	40	50	60	70	80	90	100	110	120	130	140	150
1	10	19	29	39	49	59	69	79	89	99	109	119	129	139	149

Fig. 6-1

6-4. SRV mode program reading

<Job code #900> SRV-mode programming reading

Key operation:



01/01/00	D:45AM
000H0003	
#900	
901H	0012
902H	1040
903H	5000
904H	0422
905H	2000
906H	0001
	Z1 0000
	Z2 0000
GT1	\$0000000000.00
912H	
913H	
GT2	\$0000000000.00
914H	
915H	
GT3	\$0000000000.00
930H	0000

Fig. 6-2

<Job code #950> Free key reading

Key operation:

950 → @/FOR → CA/AT

01/01/00	0:45AM	031	CHK	144
00000004		032	CH 1	154
#950		033	CH 2	145
001	0 KEY	034	CH 3	155
002	1 KEY	035	FSTND	156
003	2 KEY	036	R/A	103
004	3 KEY	037	P/D	113
005	4 KEY	038	NS	147
006	5 KEY	039	PRINT	009
007	6 KEY	040	RCPT	018
008	7 KEY	041	CD-N	157
009	8 KEY	042	L1	115
010	9 KEY	043	L2	116
011	00 KEY	044	L3	116
012	. KEY	045	DPT.01	124
013	CL	046	DPT.02	125
014	@/FOR	047	DPT.03	126
015	W/SBTL	048	DPT.04	127
016	CA/AT	049	DPT.05	128
017	PLUM	050	DPT.06	134
018	(-)>1	051	DPT.07	135
019	(-)>2	052	DPT.08	136
020	%1	053	DPT.09	137
021	%2	054	DPT.10	138
022	TAK	055	DPT.11	104
023	TAK1ST	056	DPT.12	114
024	TAK2ST	057	DPT.13	---
025	FS SFT	058	DPT.14	---
026	RFND	059	DPT.15	---
027	VOID	060	DPT.16	---
028	MOSEST	061	DPT.17	---
029	TRAYST	062	DPT.18	---
030	CA2	063	DPT.19	---
		064	DPT.20	---

Fig. 6-3

<Job code #951> PLU free key reading

Key operation:

951 → @/FOR → CA/AT

01/01/00	0:46AM	031	PLU031	004
00000005		032	PLU032	013
#951		033	PLU033	022
001	PLU001	034	PLU034	032
002	PLU002	035	PLU035	042
003	PLU003	036	PLU036	052
004	PLU004	037	PLU037	062
005	PLU005	038	PLU038	072
006	PLU006	039	PLU039	082
007	PLU007	040	PLU040	092
008	PLU008	041	PLU041	005
009	PLU009	042	PLU042	014
010	PLU010	043	PLU043	023
011	PLU011	044	PLU044	033
012	PLU012	045	PLU045	043
013	PLU013	046	PLU046	053
014	PLU014	047	PLU047	063
015	PLU015	048	PLU048	073
016	PLU016	049	PLU049	083
017	PLU017	050	PLU050	093
018	PLU018	051	PLU051	006
019	PLU019	052	PLU052	015
020	PLU020	053	PLU053	024
021	PLU021	054	PLU054	034
022	PLU022	055	PLU055	044
023	PLU023	056	PLU056	054
024	PLU024	057	PLU057	064
025	PLU025	058	PLU058	074
026	PLU026	059	PLU059	084
027	PLU027	060	PLU060	094
028	PLU028	061	PLU061	007
029	PLU029	062	PLU062	016
030	PLU030	063	PLU063	025
		064	PLU064	035
		065	PLU065	045
		066	PLU066	055
		067	PLU067	065
		068	PLU068	075
		069	PLU069	085
		070	PLU070	095
		071	PLU071	008
		072	PLU072	017
		073	PLU073	026
		074	PLU074	036
		075	PLU075	046
		076	PLU076	056
		077	PLU077	066
		078	PLU078	076
		079	PLU079	086
		080	PLU080	096
		081	PLU081	027
		082	PLU082	037
		083	PLU083	047
		084	PLU084	057
		085	PLU085	067
		086	PLU086	077
		087	PLU087	087
		088	PLU088	097
		089	PLU089	107
		090	PLU090	117
		091	PLU091	028
		092	PLU092	038
		093	PLU093	048
		094	PLU094	058
		095	PLU095	068
		096	PLU096	078
		097	PLU097	088
		098	PLU098	098
		099	PLU099	108
		100	PLU100	118

Fig. 6-4

6-5. Down-load function

AS one of features of the ER3100, it is possible to transfer RAM data (system RAM and bank RAM) between an ER3100 and another ER3100 which is useful in protecting data during machine servicing. The special cable (QCNW-6952RCZZ) must be used to perform data transfer between the two ER3100's.

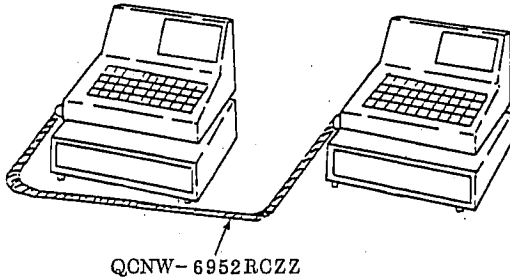


Fig. 6-5

(1) SIO interface specification

- 1) Operating mode: Half-duplex
- 2) Connection: Direct connection
- 3) Transmission speed: 9600, 4800, 2400, 1200, 600 bps
(to be selected by Job #902 in the SRV mode)
- 4) Synchronization: Async
- 5) Parity check: Vertical, odd
- 6) Code system: ASCII, BCD
- 7) Signal level: TTL
- 8) Data format: 1 start bit + 7 data bits + 1 parity bit + 1 stop bit.

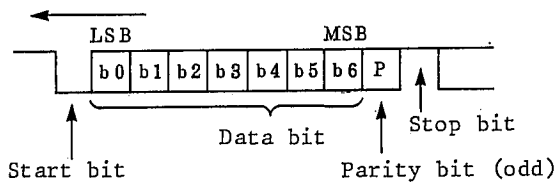


Fig. 6-6

- 9) Data size: 255 bytes, max.

(2) Cable connection

QCNW-6952RCZZ

TPX 2203-01-010

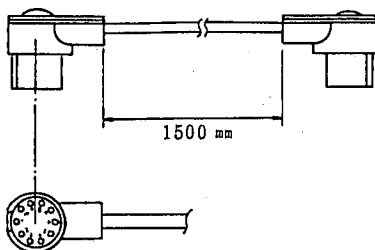
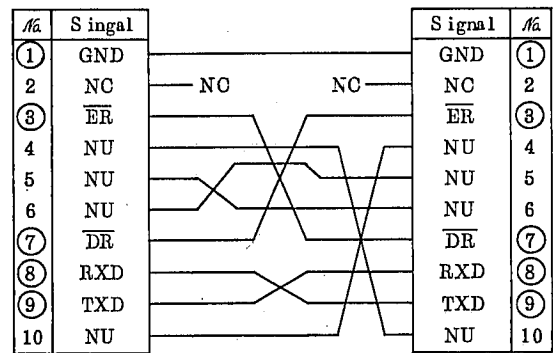


Fig. 6-7



NU: Not used

Fig. 6-8

°Interface signal

Pin No.	Signal name	Description	I/O as seen from the main unit	ON level
1	GND (SG)	Signal ground		
2	NC			
3	$\overline{\text{ER}}$	Device ready (power on)	Out	Low
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	$\overline{\text{DR}}$	Data set ready	In	Low
8	RXD	Receive data	In	Mark=high, space=low
9	TXD	Transmit data	Out	Mark=high, space=low
10	-	-	-	-

This cable is identical to the one used for the ER5200. But, it has to be noted that different signals are used.

(3) Application specification

The following service (SRV) modes are available for the serial data transfer of the ER3100.

① All RAM contents transmit

996 → [] → @/FOR → CA/AT

② SSP transmit

997 → [] → @/FOR → CA/AT

③ Receive

998 → [] → @/FOR → CA/AT

① All RAM contents transmit

The contents of all RAMs are transmitted.

°Key operation

996 → [] → @/FOR → CA/AT

°Display

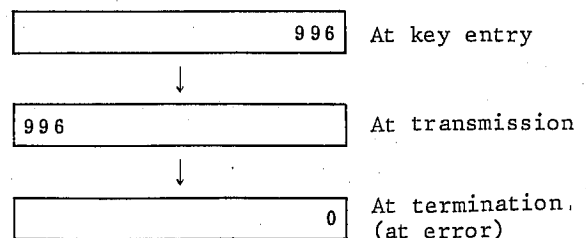


Fig. 6-9

°Termination printout

The following message is printed on the paper upon termination of transmission.

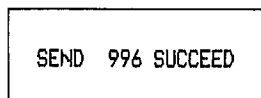
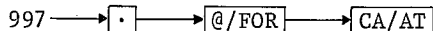


Fig. 6-10

② SSP transmit

Only the SSP data are transmitted.

°Key operation



°Display

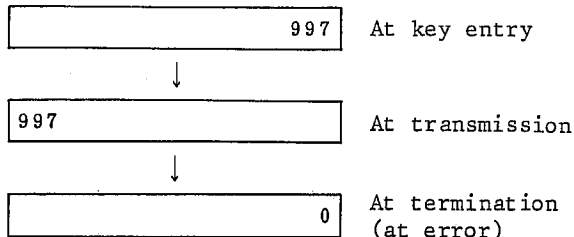


Fig. 6-11

°Termination printout

The following message is printed on the paper upon termination of transmission.

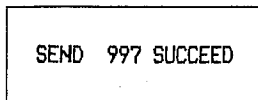
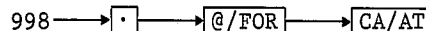


Fig. 6-12

③ Receive

Data are received.

°Key operation



°Display

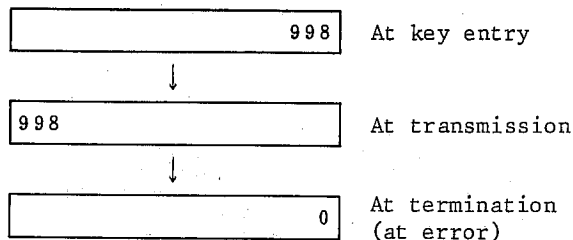


Fig. 6-13

°Termination printout

The following message is printed on the paper upon termination of transmission.

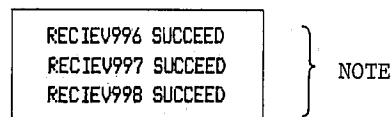


Fig. 6-14

NOTE: 996: When receiving all RAM contents
997: When receiving SSP data
998: When receiving data from EROLFD

(4) Transmission protocol

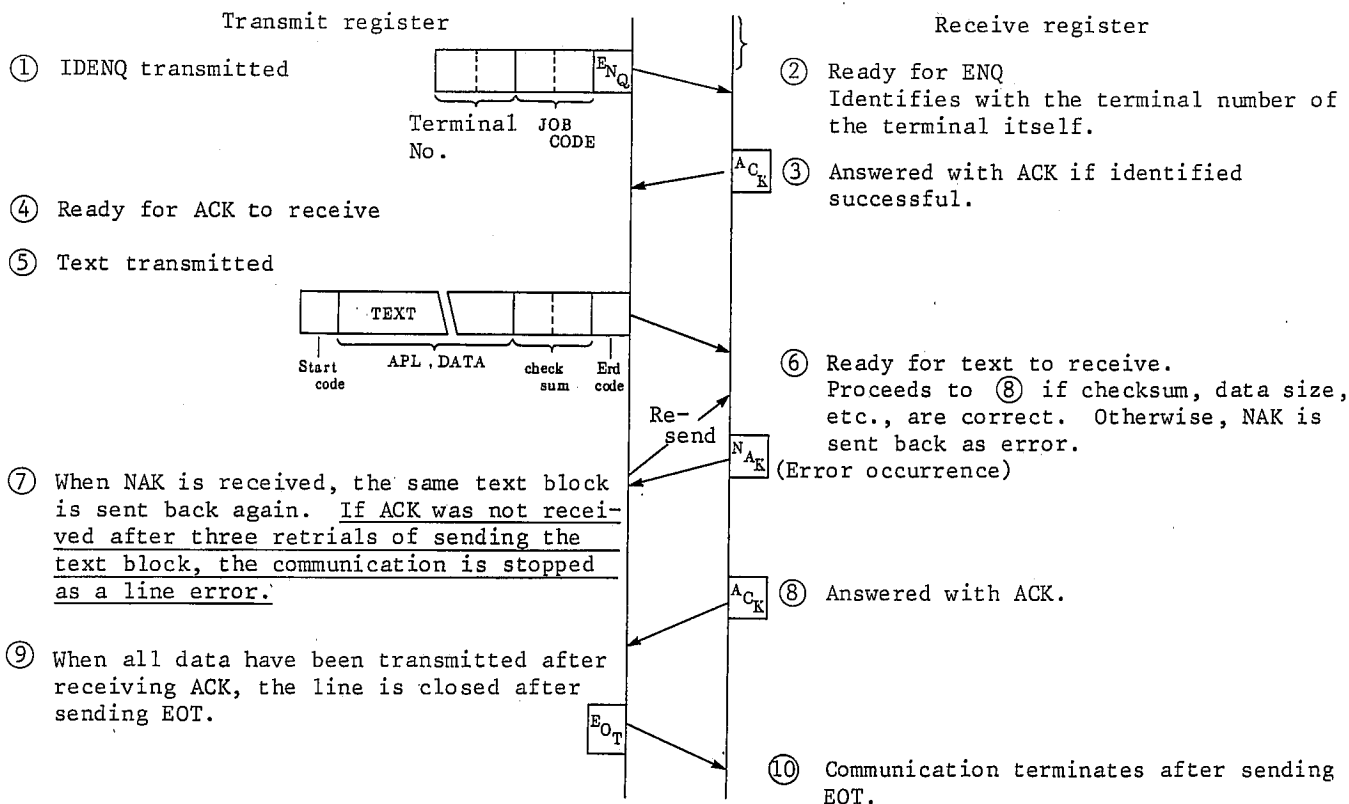
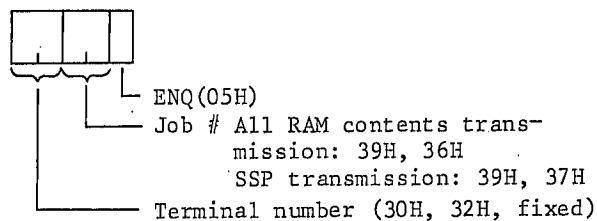


Fig. 6-15

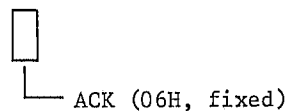
(5) Data format

One byte of the RAM data to be transmitted is divided into high order four bits and low order four bits and converted into ASCII code or BCD. Then, they are transmitted in the following format as memory image. Status is transmitted as a block.

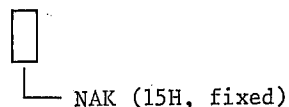
(5)-1 ENQ block (enquiry)



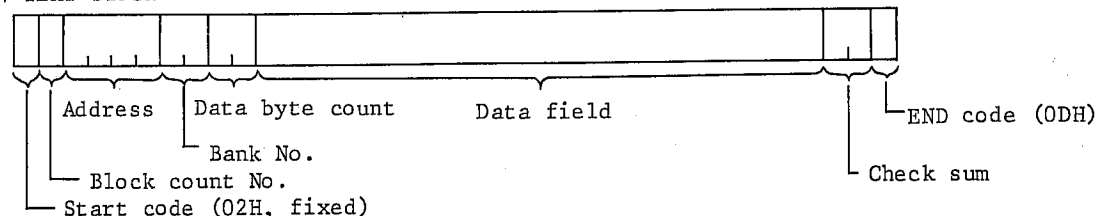
(5)-2 ACK block (normal acknowledge)



(5)-3 NAK block (non-acknowledge)



(5)-4 TEXT block



- Start code: STX 02H, fixed
- Block count No.: Ring count method (30H+31H+32H+...+39H)
- Address: Represents the memory top address of the data to be transmitted in the ASCII code.
- Data byte count: Indicates the number of effective data within the data field.

- Data field: Memory contents are converted into ASCII code and sent. Fixed to 128 bytes.

- Check sum
- End code: CR (0DH, fixed)

(6) Operational method

- 1) Get ready one unit of ER3100 as a receiver. The memory size (RAM capacity) of this unit must be larger than the unit on the transmit side.
- 2) Master reset the receiver ER3100.
- 3) Match the baud rate of the transmitter with the receiver using Job #902 in the SRV mode.
- 4) Connect loader cable (QCNW-6952RCZZ) between ER3100s.
- 5) Set the receiving ER3100 ready to receive.

998 → [] → [@/FOR] → [CA/AT]

- 6) Start the transmitting ER3100.

996 → [] → [@/FOR] → [CA/AT]
997

- 7) Transmission starts.

(7) Error print

When an error is met during transmission or reception, the transmission terminates with the following printed.

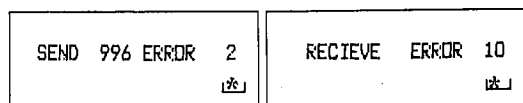


Fig. 6-16

*: Error status

Description of error status

- 1: Instruction error
- 2: Line error (such as terminal number)
- 3: Parity error
- 4: Check sum error
- 5: Data size error (at the receiving side)
- 6: Data size error (at the transmitting side)
- 7: Hardware error
- 8: Power off error
- 10: Time out error
- 11: Protect error
- 12: Block sequence error

7. PGM1/PGM2(Program) MODE

7-1. Secret code entry

- (1) To start the key operation for programming in the PGM1 or PGM2 mode, the secret code programmed for each mode is entered in the order given below.

In PGM1 and PGM2 modes

CA/AT → XXXX → CA/AT
(Secret code)

- (2) The secret code for PGM1 mode is programmed in the PGM2 mode and that for the PGM2 mode in the SRV mode.
- (3) Once a secret code is entered in a mode, the code does not need to be entered again in the same mode.
- (4) If the secret code is programmed for "0", no secret code entry is compelled.

7-2. PGM JOB CODE LIST

JOB #	DATA	JOB #	DATA
110	Dept unit price programming	241	% tax rate
210	Dept function programming 1	144	Cashier name programming
211	Dept function programming 2	250	Date
212	Dept function programming 3	251	Time
214	Dept text programming	252	Machine number
120	PLU unit price programming	253	Consecutive number
121	PLU programming 1	254	Logo message
221	PLU programming 2	255	Validation counter
224	PLU text programming	256	Optional feature selection
226	PLU group No. programming	257	Sentinel amount programming
130	% rate programming	260	Media key programming 1
131	Currency conversion rate programming	261	Media key programming 2
230	Miscellaneous key programming 1	262	Media key programming 3
231	Miscellaneous key programming 2	270	Time interval for drawer open count
232	Miscellaneous key programming 3	275	Promotion code programming
234	Miscellaneous key programming 4	280	Secret code for PGM 1 mode
235	% ITEM/% SBTL selection for %1, %2	281	Secret code for Z1
236	Vender/Store coupon selection for (-)1/, (-)2	282	Secret code for Z2
237	Miscellaneous keys text programming	225	Bottle deposit programming
240	Tax tables		

7-3. Programming (More detail please refer to the Instruction Book.)

Job #	Meaning	
110	Dept unit price programming	110 → [.] → @/FOR → 1-20 (Dpt code) → XX → @/FOR → 0 (Dpt code auto increment) → XXXXXX (Price) → #/SBTL → CA/AT MRS=0
210	Dept function programming 1	210 → [.] → @/FOR → 1-20 (Dpt code) → XX → @/FOR → 0 (Dpt code auto increment) → ABC (Price) → #/SBTL → CA/AT MRS=000 A: HASH/Normal = 1/0 B: Single item finalize/Single sale/Normal = 2/1/0 C: Open & Preset/Preset/Open/Inhibit = 3/2/1/0
211	Dept function programming 2	211 → [.] → @/FOR → 1-20 (Dpt code) → XX → @/FOR → 0 (Dpt code auto increment) → ABCD (Price) → #/SBTL → CA/AT A: -/+ sign = 1/0 B: Food stamp eligible = 1/0 C: Taxable 2./Not. = 1/0 D: Taxable 1./Not. = 1/0
212	Dept function programming 3	212 → [.] → @/FOR → 1-20 (Dpt code) → XX → @/FOR → 0 (Dpt code auto increment) → XZ (Price) → #/SBTL → CA/AT MRS=97 X: Max. = 0-9 Z: HALO = 0-7
214	Dept text programming (8 characters)	214 → [.] → @/FOR → 1-20 (Dpt code auto increment) → XX → @/FOR → Space Character key(8) → #/SBTL → CA/AT MRS=DPT.XX * Characters can be entered by the use of either character keys or ten numeric keys. ° Character entry sequence by ten numeric keys (for 1 character) ZZZ [00] ZZZ; Character code (3 digits)
120	PLU unit price programming	Up to 6 digits for price or Unit. XXXXXX 120 → [.] → @/FOR → 1-999 (PLU code) → XXX → @/FOR → 0 (PLU code auto increment) → XXXXXX (Price) → #/SBTL → CA/AT MRS=0
121	PLU programming 1	121 → [.] → @/FOR → 1-999 (PLU code) → XXX → @/FOR → To prohibit XX (Dpt code) → #/SBTL → CA/AT MRS=0 Dpt code 1-20

Job #	Meaning	
221	PLU programming 2	221 → . → @/FOR → 1-999 → XXX → @/FOR → 0 → ABCD → #/SBTL → CA/AT (PLU code) PLU code auto increment MRS=0000 A: -/+ sign = 1/0 B: Food stamp eligible = 1/0 C: Taxable 2./Not. = 1/0 D: Taxable 1./Not. = 1/0
224	PLU text programming (8 characters)	224 → . → @/FOR → 1-999 → XXX → @/FOR → (Space) → Character key (8) → #/SBTL → CA/AT (PLU code) PLU code auto increment MRS=PLU-XXX Characters can be entered by the use of either characters keys or ten numeric keys.
225	Bottle deposit programming	225 → . → @/FOR → 1-999 → XXX → @/FOR → 0 → XXX → #/SBTL → CA/AT (PLU code) (Linked PLU code) PLU code auto increment MRS=0 Programming is cancelled by entering "0".
226	PLU group number	226 → . → @/FOR → 1-999 → XXX → @/FOR → 0 → XX → #/SBTL → CA/AT (PLU code) (Group No.) PLU code auto increment Group No. = 1-15 MRS=00
130	% rate programming %1, %2 keys	130 → . → @/FOR → XX → @/FOR → 0 → XXXX → #/SBTL → CA/AT (Func. No.) 0.00%-99.99% Func. No.: 3 = %1 4 = %2 MRS=0.00
131	Currency conversion rate programming	131 → . → @/FOR → 42 → @/FOR → 0 → XXXXXX → #/SBTL → CA/AT (Func. No.) 0.000%-999.999% MRS=0.000
230	Miscellaneous keys programming 1	230 → . → @/FOR → XX → @/FOR → 0 → A → #/SBTL → CA/AT (Func. No.) Func. No.: 38 = PO 39 = RA Validation enforced./Optional. = 1/0 for RA and PO MRS=0 for the all
231	Miscellaneous key programming 2	231 → . → @/FOR → XX → @/FOR → 0 → ABCD → #/SBTL → CA/AT (Func. No.) MRS=1000 A: -/+ sign for %1, %2 keys = 1/0 B: Food stampable./Not. = 1/0 C: Taxable2./Not. = 1/0 D: Taxable1./Not. for %1, %2, (-)1, (-)2 keys. = 1/0 Func. No.: ⊖1 = 1 %1 = 3 ⊖2 = 2 %2 = 4

Job #	Meaning																																																																																																																									
232	Miscellaneous keys programming 3	232 → [.] → [@/FOR] → XX → [@/FOR] → 0 → [#/SBTL] → CA/AT (Func. No.) ⊖1 = 1 PO = 38 MRS=97 ⊖2 = 2 RA = 39 X: Max digit = 0-9 M-TAX = 16 Z: HALO digit = 0-7																																																																																																																								
234	Miscellaneous keys programming 4	234 → [.] → [@/FOR] → XX → [@/FOR] → 0 → [#/SBTL] → CA/AT (Func. No.) A: Open & preset./Prest./Open. = 3/2/1 MRS=1																																																																																																																								
235	%Item/%SBTL selection for %1, %2.	235 → [.] → [@/FOR] → XX → [@/FOR] → 0 → [#/SBTL] → CA/AT (Func. No.) Func. No. %1 = 3 0: %SBTL MRS=0 %2 = 4 1: %ITEM																																																																																																																								
236	Vender/Store coupon selection for (-)1, (-)2	236 → [.] → [@/FOR] → XX → [@/FOR] → 0 → [#/SBTL] → CA/AT (Func. No.) Func. No. ⊖1 = 1 0: Vender MRS=0 ⊖2 = 2 1: Store																																																																																																																								
237	Miscellaneous & Media key programming (6 characters)	237 → [.] → [@/FOR] → XX → [@/FOR] → Space → [#/SBTL] → CA/AT (Func. No.) Character key (6) MRS=Default Function Default No. <table><tr><td>1</td><td>(-) 1</td><td>2</td><td>(-) 2</td><td>3</td><td>% 1</td><td>4</td><td>% 2</td><td>5</td><td>NET 1</td><td>6</td><td>TAX1ST</td></tr><tr><td>7</td><td>GRSTX1</td><td>8</td><td>RFDTX1</td><td>9</td><td>TAX 1</td><td>10</td><td>TAX2ST</td><td>11</td><td>GRSTX2</td><td>12</td><td>RFDTX2</td></tr><tr><td>13</td><td>TAX 2</td><td>14</td><td>MGRSTX</td><td>15</td><td>MRFDTX</td><td>16</td><td>M-TAX</td><td>17</td><td>FS TX1</td><td>18</td><td>FS TX2</td></tr><tr><td>19</td><td>TL TAX</td><td>20</td><td>NET 2</td><td>21</td><td>(-)PLU</td><td>22</td><td>VOID</td><td>23</td><td>VD MGR</td><td>24</td><td>VD TRN</td></tr><tr><td>25</td><td>RFND</td><td>26</td><td>VD (H)</td><td>27</td><td>RF (H)</td><td>28</td><td>NOSALE</td><td>29</td><td>VP CNT</td><td>30</td><td>TRY CN</td></tr><tr><td>31</td><td>DRW CN</td><td>32</td><td>CUSTRM</td><td>33</td><td>NET 3</td><td>34</td><td>CASH</td><td>35</td><td>CASH2</td><td>36</td><td>FSSALE</td></tr><tr><td>37</td><td>FSTEND</td><td>38</td><td>***P/O</td><td>39</td><td>***R/A</td><td>40</td><td>CHK/CG</td><td>41</td><td>FS/CG</td><td>42</td><td>CONV</td></tr><tr><td>43</td><td>*FS/1D</td><td>44</td><td>CH 1</td><td>45</td><td>CH 2</td><td>46</td><td>CH 3</td><td>47</td><td>CHECK</td><td>48</td><td>**C1D</td></tr><tr><td>49</td><td>**TTL</td><td>50</td><td>**SALE</td><td>51</td><td>*COPY*</td><td>52</td><td>CHNG</td><td>53</td><td>TRAYST</td><td>54</td><td>ST</td></tr><tr><td>55</td><td>DPTTL</td><td>56</td><td>G TL</td><td>57</td><td>TL*</td><td>58</td><td>TL*-</td><td>59</td><td>TLH</td><td>60</td><td>TLH-</td></tr></table> Characters can be entered by the use of either character keys or ten numeric keys.	1	(-) 1	2	(-) 2	3	% 1	4	% 2	5	NET 1	6	TAX1ST	7	GRSTX1	8	RFDTX1	9	TAX 1	10	TAX2ST	11	GRSTX2	12	RFDTX2	13	TAX 2	14	MGRSTX	15	MRFDTX	16	M-TAX	17	FS TX1	18	FS TX2	19	TL TAX	20	NET 2	21	(-)PLU	22	VOID	23	VD MGR	24	VD TRN	25	RFND	26	VD (H)	27	RF (H)	28	NOSALE	29	VP CNT	30	TRY CN	31	DRW CN	32	CUSTRM	33	NET 3	34	CASH	35	CASH2	36	FSSALE	37	FSTEND	38	***P/O	39	***R/A	40	CHK/CG	41	FS/CG	42	CONV	43	*FS/1D	44	CH 1	45	CH 2	46	CH 3	47	CHECK	48	**C1D	49	**TTL	50	**SALE	51	*COPY*	52	CHNG	53	TRAYST	54	ST	55	DPTTL	56	G TL	57	TL*	58	TL*-	59	TLH	60	TLH-
1	(-) 1	2	(-) 2	3	% 1	4	% 2	5	NET 1	6	TAX1ST																																																																																																															
7	GRSTX1	8	RFDTX1	9	TAX 1	10	TAX2ST	11	GRSTX2	12	RFDTX2																																																																																																															
13	TAX 2	14	MGRSTX	15	MRFDTX	16	M-TAX	17	FS TX1	18	FS TX2																																																																																																															
19	TL TAX	20	NET 2	21	(-)PLU	22	VOID	23	VD MGR	24	VD TRN																																																																																																															
25	RFND	26	VD (H)	27	RF (H)	28	NOSALE	29	VP CNT	30	TRY CN																																																																																																															
31	DRW CN	32	CUSTRM	33	NET 3	34	CASH	35	CASH2	36	FSSALE																																																																																																															
37	FSTEND	38	***P/O	39	***R/A	40	CHK/CG	41	FS/CG	42	CONV																																																																																																															
43	*FS/1D	44	CH 1	45	CH 2	46	CH 3	47	CHECK	48	**C1D																																																																																																															
49	**TTL	50	**SALE	51	*COPY*	52	CHNG	53	TRAYST	54	ST																																																																																																															
55	DPTTL	56	G TL	57	TL*	58	TL*-	59	TLH	60	TLH-																																																																																																															
240	TAX TABLES 112 break points can be shared for two tables.	240 → [.] → [@/FOR] → AB → [@/FOR] → XX.XXXX → [@/FOR] → XXXX → [@/FOR] → XXXX → [@/FOR] → XXXX → [@/FOR] → CA/AT Tax rate Cycle Initial tax Lower tax limit Break point MRS=No table A: The difference between a break point and the next one is \$1.00 or more./Less than \$1.00 = 1/0 B: Table 1 programming/Table 2 = 1/2 By hitting the #/SBTL key at the any timing after "*" point, the auto tax feature will be deleted.																																																																																																																								

Job #	Meaning							
241	% TAX RATE	241 → [•] → [@/FOR] → A → [@/FOR] → XX.XXXX → [@/FOR] 1 or 2 % TAX RATE XXXX Lower TAXATION LIMIT CA/AT #/SBTL → FOR % TAX DELETE MRS=0 A: For TAX1 (A=1) and TAX2 (A=2) Presettable TAX RATE range = 0.0001-99.9999% Maximum lower taxation limit = \$99.99						
144	Cashier name programming, 8 characters for each of four cashiers	144 → [•] → [@/FOR] → 1-4 → Z → [@/FOR] → Space → Character key (8) → #/SBTL → CA/AT MRS=Space Cashier code (Z): 1:(A), 2:(B), 3:(D), 4:(E) Characters can be entered by the use of either character keys or ten numeric keys						
250	Date	250 → [•] → [@/FOR] → XXXXXX → [CA/AT] MRS=0 MM/DD/YR or DD/MM/YR (Programmed by SRV # 905D)						
251	Time	251 → [•] → [@/FOR] → 0 → XXXX → [CA/AT] MRS=0 Enter the time in 24-hour format. 1AM=100 1PM=1300						
252	Machine number 3 digits	252 → [•] → [@/FOR] → 0 → XXX → [CA/AT] MRS=0						
253	Consecutive number 4 digits	253 → [•] → [@/FOR] → 0 → XXXX → [CA/AT] MRS=0						
254	Logo message (21 characters)	254 → [•] → [@/FOR] → 1-6 → Z → [@/FOR] → Space → Character key (21) → #/SBTL → CA/AT MRS= Space 6 lines <table><tr><td>1</td></tr><tr><td>2</td></tr><tr><td>3</td></tr><tr><td>4</td></tr><tr><td>5</td></tr><tr><td>6</td></tr></table>	1	2	3	4	5	6
1								
2								
3								
4								
5								
6								
255	Validation counter.	255 → [•] → [@/FOR] → 0 → YX → [CA/AT] MRS=01 Y: Number of line feed 0-9 X: V.P. count 0-9						

Job #	Meaning	
256	Optional feature selection	256 → [•] → [@/FOR] → ⁰ ABCDEFG → [CA/AT] MRS=0000000 A: PLU shit method 0: Auto, REG & MGR mode 1: Auto, MGR mode only 2: Manual, REG & MGR mode 3: Manual, MGR mode only B: OP X/Z Inhibit./Exist. = 1/0 C: Inhibit VOID TRANSACTION in Reg./Not. = 1/0 D: Inhibit last item void in Reg./Not. = 1/0 E: Inhibit pait item void in Reg./Not. = 1/0 F: Inhibit RF in Reg./Not. = 1/0 G: Journal select./Full print. = 1/0
257	Sentinel amount programming	257 → [•] → [@/FOR] → ⁰ XXXXXXXX → [CA/AT] MRS=000000000 \$0.00 - \$99999.99 (Up to 9 digits)
260	Media key programming 1 Treatment of each media key	260 → [•] → [@/FOR] → XX → [@/FOR] → ⁰ DEABC → [#/SBTL] → [CA/AT] (Func. No.) MRS=000 A: Over tender disallowed/Allowed = 1/0 (for check and charges 1-3) Func. No. B: Validation compulsory./Not. = 1/0 CA/AT = 34 C: Amount tendering compulsory. = 1/0 CA2 = 35 /Optional for cashes and check. CH1 = 44 → or compulsory./Inhibited for charges 1-3. CH2 = 45 D: TAX 2 DELETE/Not. = 1/0 CH3 = 46 E: TAX 1 DELETE/Not. = 1/0 CHK = 47
261	Media key programming 2 Upper limit of change due at the time of payment by check	261 → [•] → [@/FOR] → 40 → [@/FOR] → ⁰ XZ → [#/SBTL] → [CA/AT] MRS=98 X: Max = 0-9 Z: HALO = 0-8
262	Media key programming 3 Limit on the number of entry digits of each media key	262 → [•] → [@/FOR] → XX → [@/FOR] → ⁰ XZ → [#/SBTL] → [CA/AT] (Func. No.) MRS=98 Func. No. CA2 = 35 CH1-CH3 = 44-46 X: Max = 0-9 CHK = 47 Z: HALO (5media keys) = 0-8
270	Time interval for drawer open count. 0 to 255 seconds	270 → [•] → [@/FOR] → ⁰ XXX → [CA/AT] MRS=0
275	Promotion code programming	275 → [•] → [@/FOR] → ABC → [@/FOR] → XXX → [#/SBTL] → [CA/AT] (PLU code) (Valid only once. Promotion is cancelled. Auto increment from 1 to 5) A: 1 or 2 BC: DPT CODE

Job #	Meaning	
280 281 282	Secret code (4 digits) for PGM1 mode: #280 Z1 (X1/Z1 mode): #281 Z2 (X2/T2 mode): #282	280 281 → • → @/FOR → XXXX → CA/AT 282 0 MRS=0000

7-4. PGM programming reading

Job #	Meaning	
110	Dept programming reading	110 → @/FOR → CA/AT
120	PLU programming reading	120 → @/FOR → XXX → @/FOR → XXX → CA/AT Start PLU code END PLU code 0
130	Miscellaneous programming reading	130 → @/FOR → CA/AT
140	Cashier reading	140 → @/FOR → CA/AT
240	Tax table reading	240 → @/FOR → CA/AT

7-5. TEXT preset

1) For a text or name for Job #214, 224, 237, 144, and 254, there are two ways of using a character key and entering a 3-digit code.

2) Fig. 7-1 shows the relation of character keys vs. character. Use the keyboard template that comes with the machine.

↑ RECEIPT	↑ JOURNAL																
1	2	3	4	1/2	FT	F	T	←	→								
!!	¢	!	”	#	\$	%	&	'	(								
)	*	+	,	—	.	/	:	;	<								
=	>	?	@	^	_	'	{		}					@/FOR	CL		
0	1	2	3	4	5	6	7	8	9					7	8	9	
A	B	C	D	E	F	G	H	I	J					4	5	6	
K	L	M	N	O	P	Q	R	S	T					1	2	3	#/SBTL
U	V	W	X	Y	Z	(SPACE)	(SPACE)	(SPACE)	(DC)					0	00	•	CA/AT

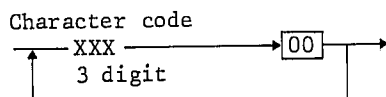
Key sheet code: PSHEZ6698RCZZ

Fig 7-1

DC=Double character

3) Code entry method

In the code entry mode, use the ten key keyboard. See below for the key entry sequence.



Character code

CODE	Chra.	CODE	Chra.	CODE	Chra.	CODE	Chra.
032		060	<	088	X	116	t
033	!	061	=	089	Y	117	u
034	"	062	>	090	Z	118	v
035	#	063	?	091	A	119	w
036	\$	064	@	092	O	120	x
037	%	065	A	093	U	121	y
038	&	066	B	094	Λ	122	z
039	,	067	C	095	_	123	{
040	(	068	D	096	'	124	
041	)	069	E	097	a	125	}
042	*	070	F	098	b	126	ß
043	+	071	G	099	c	127	¢
044	,	072	H	100	d	128	!!
045	-	073	I	101	e	129	1
046	.	074	J	102	f	130	2
047	/	075	K	103	g	131	3
048	0	076	L	104	h	132	4
049	1	077	M	105	i	133	1/2
050	2	078	N	106	j	134	Fr
051	3	079	O	107	k	135	←
052	4	080	P	108	l	136	→
053	5	081	Q	109	m	137	~
054	6	082	R	110	n	138	≈
055	7	083	S	111	o	139	◀
056	8	084	T	112	p	140	▶
057	9	085	U	113	q	141	F
058	:	086	V	114	r	142	T
059	:	087	W	115	s	251	DC

DC: Double code

8. OP X/Z, X1, Z1/X2/Z2 MODE

8-1. OP X/Z mode

IN/OUT TIME PRINTING

1. The following key operation print the date, cashier code and time:

- 1) **1** → **PRINT**: Prints the date, cashier code, and time on the left half of the printing area.
- 2) **2** → **PRINT**: Prints the date, cashier code, and time on the right half of the printing area.

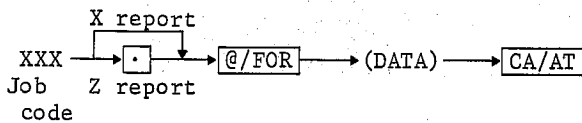
2. Sample prints

01-28-87 A 10:25AM 01/28/87 A 10:25AM

Fig. 8-1

8-2. X/Z mode

Key operation:



X/Z JOB CODE LIST

Job #	Report name	Mode			Data form
		OP X/Z	X ₁	Z ₁ /X ₂ /Z ₂	
1	General	-	X ₁	Z ₁	-
201		-	-	X ₂ /Z ₂ *1	
2	Individual cashier	X/Z	X ₁	Z ₁	Cashier key
4	Hourly	-	X ₁	-	(RANGE)2
5		-	X ₁	Z ₁	-
205	Full cashier	-	X ₁	Z ₁	-
		-	-	X ₂ /Z ₂ *1	
20	PLU block	-	X ₁	Z ₁	(RANGE)1
21	PLU by associated dept.	-	X ₁	-	*2
22	Individual group PLU	-	X ₁	-	*2
23	Full group PLU	-	X ₁	Z ₁	-
30	CID	-	X ₁	-	-

Cashier key: Must be determined before the Job # is entered.

(RANGE)1: XXX → **@/FOR** → (XXX);
"0" can not be entered.

(RANGE)2: (XXXX) → **@/FOR** → (XXXX);
XXXX = 0 - 2330

*1: RAM option required

*2: XX;

XX = 01 - 20 (for specifying dept.)
01 - 15 (for specifying group)

9. SERVICE OPTION INSTALLATION PROCEDURE

9-1. Validation sensor (DKIT-8227RCZZ)

Component parts:

DUNTK8224RCZZ: Sensor unit, with connector and screws

VRD-RC2EY163J: 16k Ω resistor (R27)

Installation:

1) Saving data (Refer to page 15)

If there is no need of saving the data, you may proceed to a next step without executing this step.

The contents of the memory of the ER3100 to be installed with the option must be saved in the data saving unit consisting of the ER3100 and ER01FD, using the cable (QCNW-6952RCZZ).

1-1) Getting the receiving ER3100/ER01FD ready for operation

ER3100

Clear the memory of the receiving ER3100 by master reset (MRS-1)..

ERO 1FD

Set the dip switch to the ER3100 mode.
Also, set the baud rate.

EX. 9600 BPS

DS1								DS2			
1	2	3	4	5	6	7	8	1	2	3	4
OFF	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF

1-2) Connecting the cable

Fasten the cable (QCNW-6952RCZZ) to the SIO connector located on the left side of the data saving ER3100 and connect the other end to the ER3100 to be installed with the option unit.

1-3) Setting the receiving ER3100 in the data receive mode

Set the mode switch of the receiving ER3100 to the SRV position and type the following command:

998 → [] → @/FOR → CA/AT

With this, the machine is set in the SIO receive mode.

No action is required for the EROLFD as it incorporates the automatic start feature.

1-4) Setting the transmitting ER3100 in the data transmit mode

Set the mode switch of the transmitting ER3100 to the SRV position and type the following command:

996 → [] → @/FOR → CA/AT

With this, data transfer takes place.

2) Removing the top cabinet (Fig. 9-1)

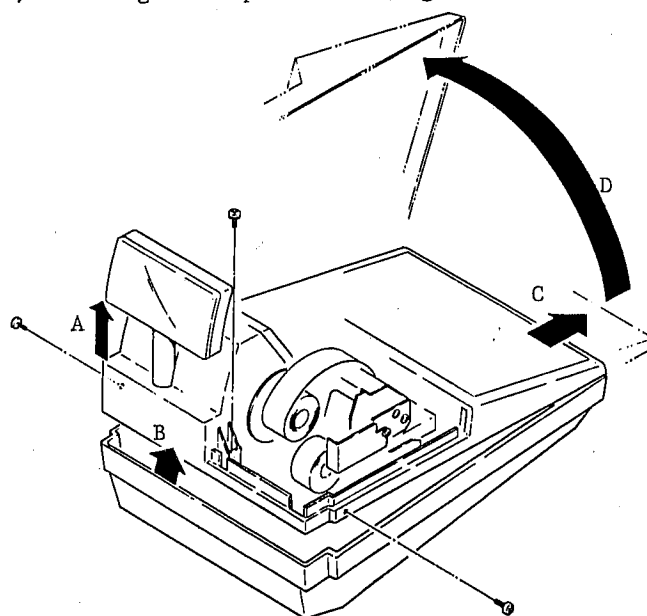


Fig. 9-1

2-1) Unplug the AC cord from the wall outlet.

2-2) Lift up the customer side popup display in the arrow direction A.

2-3) Remove the screws on both sides of the machine.
Remove the printer cover.
Remove one screw on the back of the machine.

2-4) Lift up the top cabinet from the rear and remove the top cabinet. (See arrowheads, B, C, and D.)

3) Removing the main PWB (Fig. 9-2)

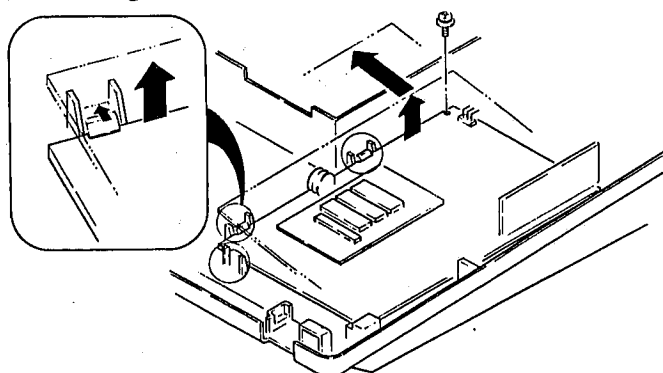


Fig. 9-2

Unfasten the 2-pin power supply connector, 13-pin display connector, two printer connector (printer side), the SIO connector, and GND wire. Remove the screw that hold the main PWB in place. Unlatch main PWB holding tabs (three) and carefully remove the main PWB from the chassis. Unfasten the drawer connector while holding up the main PWB.

4) Installing parts on the main PWB.

Install and solder the 3-pin connector, R17, and 16k Ω (VRD-RC2EY163J) on the main PWB, in reference to Fig. 9-3.

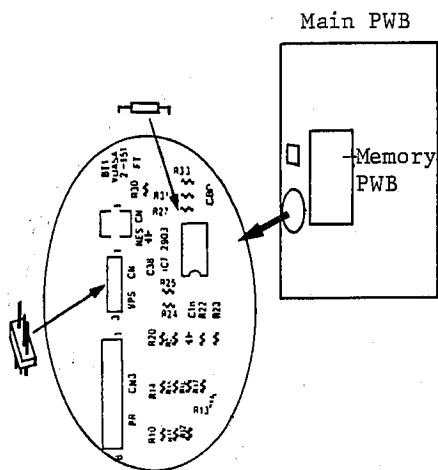


Fig. 9-3

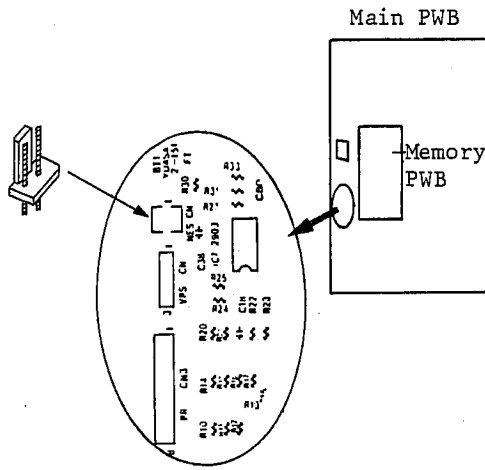


Fig. 9-4

5) Installing the sensor unit

Install the sensor unit in the M2640 printer, in reference to page 21 in M2640 Service Manual (00ZM2640SM/-E).

6) Reassembling

Replace connector and other parts in the reverse sequence.

7) Restoring the data

Load the data from the ER3100 in which the data was saved.

8) Operation check

Executes the Job #108 of the test function.

108 → CA/AT
Display
U0 P1

When validation paper loaded = U1
When validation paper unloaded = U0

9-2. Near end sensor (DKIT-8226RCZZ)

Component parts:

DUNKTK8296RCZZ: Near end sensor unit, with connector and screws

Installation:

1) Protecting data

If there is no need of saving the data, you may proceed to a next step without executing this step.

The contents of the memory of the ER3100 to be installed with the option must be saved in the data saving unit consisting of the ER3100 and ER01FD, using the cable (QCNW-6952RCZZ).

2) Removing the cabinet

Remove the cabinet in reference to 1-2).

3) Removing the main PWB

Remove the main PWB in reference to 1-3).

4) Installing parts on main PWB

Install and solder the 2-pin connector on the main PWB (Fig. 9-4).

5) Installing the sensor unit (Fig. 9-5)

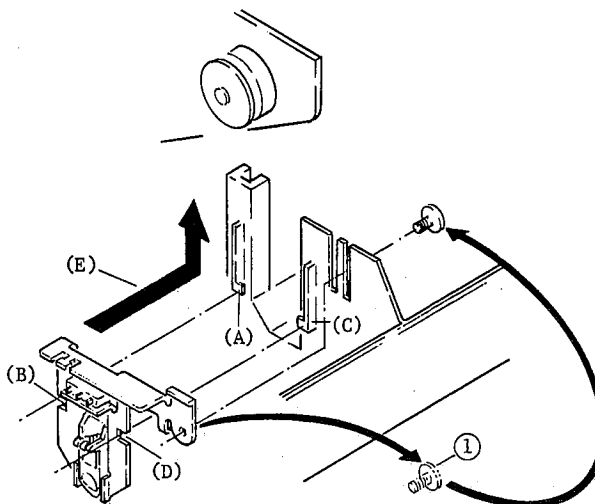


Fig. 9-5

Remove the sensor unit adjusting screw. Match the journal guides (A) and (C) to points (B) and (D) of the sensor unit, and install the sensor unit in the arrow direction (E). Then, secure it with the adjusting screw ①.

6) Fasten the connector removed at 4) with the connector from the sensor unit.

7) Replace the main PWB and the cabinet.

8) Restoring the data

Load the data saved from the ER3100 in which the data was saved.

9) Operation check

Executes the Job #108 of the test function.

108 → CA/AT
Display
U0 P0

When paper loaded = P1
When paper unloaded = P0

Adjustment:

Loosen the adjusting screw and adjust the position of the sensor unit.

9-3. Waterproof printer cover (DKIT-8322RCZZ)

Component parts:

GCOVH6884RCZZ: Waterproof printer cover
 GDAI-6658RCZZ: Bracket
 HBDGD6817RCZZ: ER3100 logo plate
 XUPSD30P12000: Screw, M3 × 12, 3 pcs
 XWHS40-08100: Washer, 3 pcs

Installation: (Fig. 9-6)

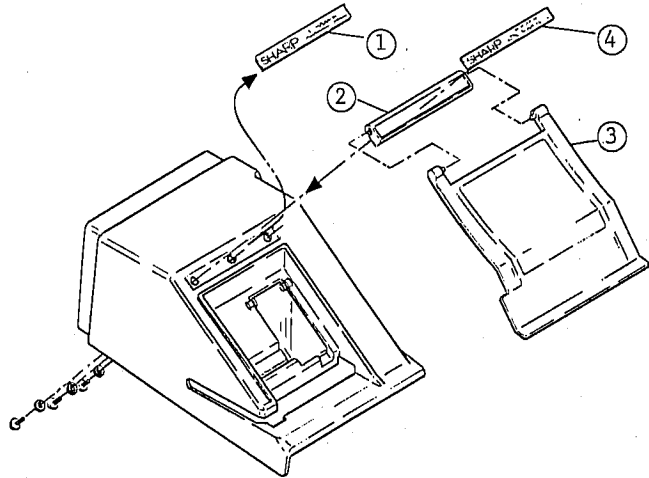


Fig. 9-6

- 1) Remove the printer cover.
- 2) Remove the logo plate ① from the printer cover.
- 3) Install the bracket ② and waterproof printer cover ③.
- 4) Install on the printer cover the components assembled in 3) above and secure it with screws and washers from the back of the printer cover.
- 5) Attach the logo plate ④. The logo plate is contained in the package.

9-4. Drawer open sensor (DKIT-8331RCZZ)

Component parts: DUNT-8332RCZZ

QSW-M6797RCZZ: Microswitch, 1 pc
 PSHEP6635RCZZ: Spacer, 1 pc
 QCNCW6925RCZZ: Wired connector for solenoid, 1 pc
 QCNW-6637RCZZ: Microswitch leads, 1 set
 LX-BZ6728RCZZ: Screw, M3 × 14, 2 pcs

Installation:

- 1) Remove two screws in the drawer bottom plate and separate the drawer from the main body. (Fig. 9-7)

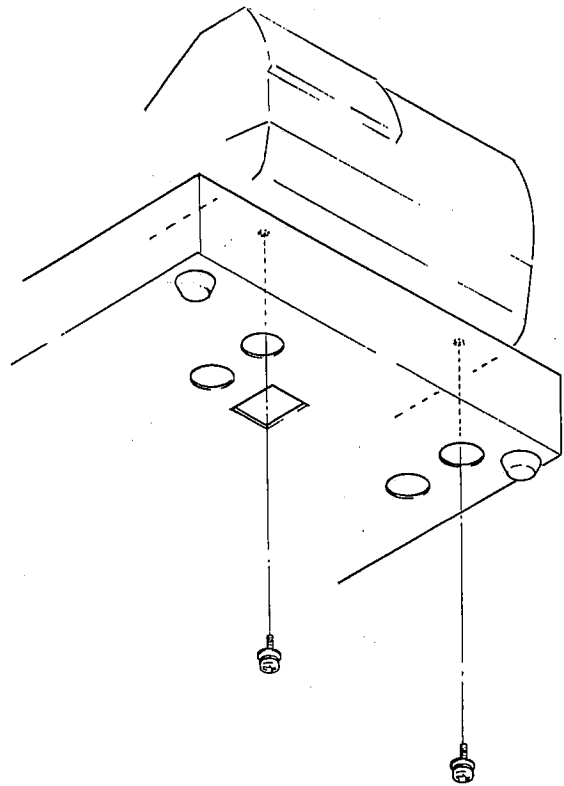


Fig. 9-7

- 2) Remove (the cabinet), drawer connector, from the main PWB.
- 3) Remove the ground wire found on the upper side of the drawer and remove the clamp ① that holds the drawer cable. Unfasten the drawer connector from the main body and completely isolate the drawer from the main body (Fig. 9-8).

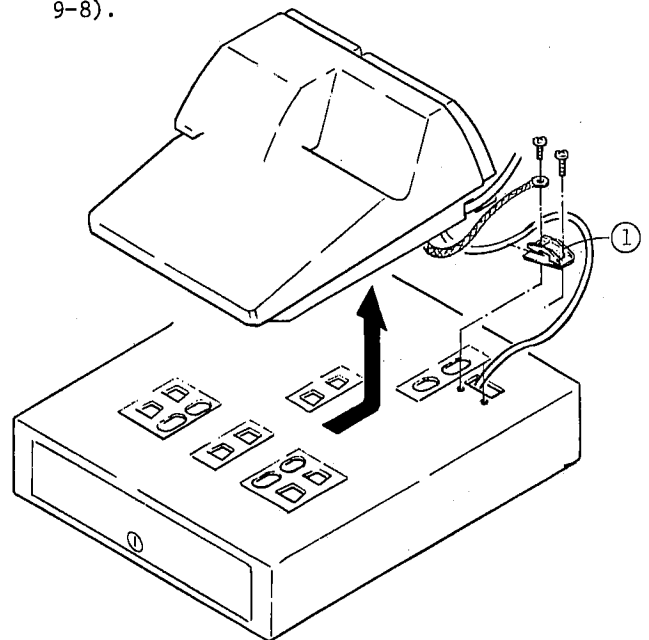


Fig. 9-8

- 4) Remove the drawer bottom plate.
- 5) Remove two nuts and remove the lock unit.

- 6) Unsolder a red lead and a white lead from the solenoid.
- 7) Solder the leads to the microswitch as shown in the Fig. 9-9.

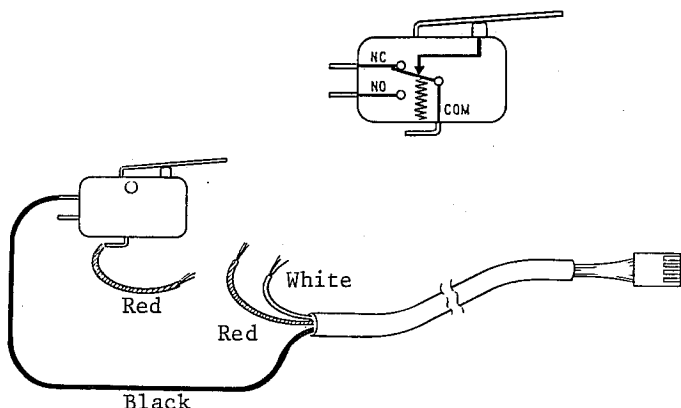


Fig. 9-9

- 8) Solder the rest of leads to the solenoid as shown in the Fig. 9-10.

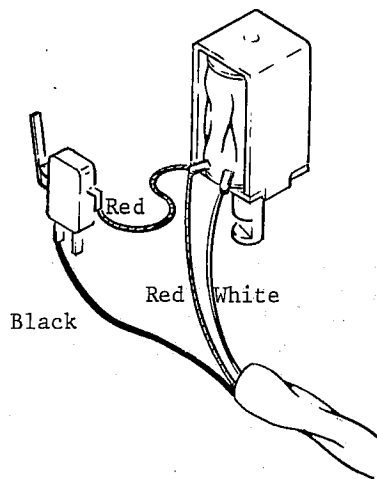


Fig. 9-10

- 9) Install the microswitch on the lock unit as shown in the Fig. 9-11.

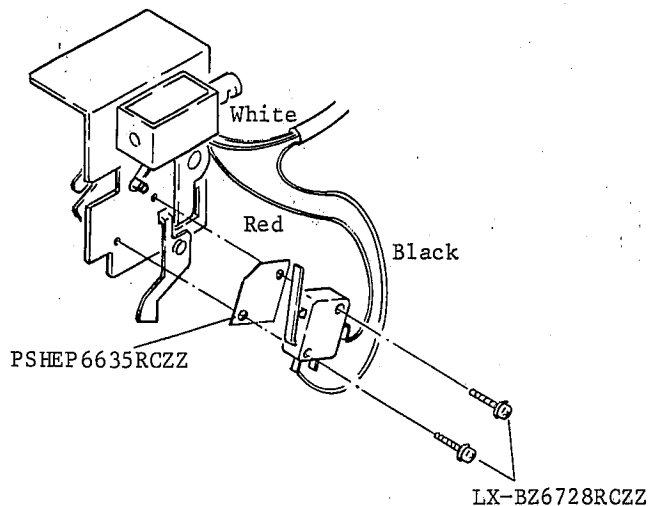


Fig. 9-11

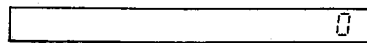
- 10) Install the lock unit in the drawer.

- 11) Secure the drawer connector with the clamp on the drawer upper side. At the same time, hold the ground wire with the clamp together.
- 12) Route the drawer connector through the bottom cabinet and install it on the main PWB.
- 13) (Replace the cabinet.)
- 14) Install the drawer to the main body using the screw saved.
- 15) Operation check

Executes the Job #111 of the test function.

111 → CA/AT

Display



When drawer open = 0
When drawer close = [

Service programming: (Refer to page 9, 10)

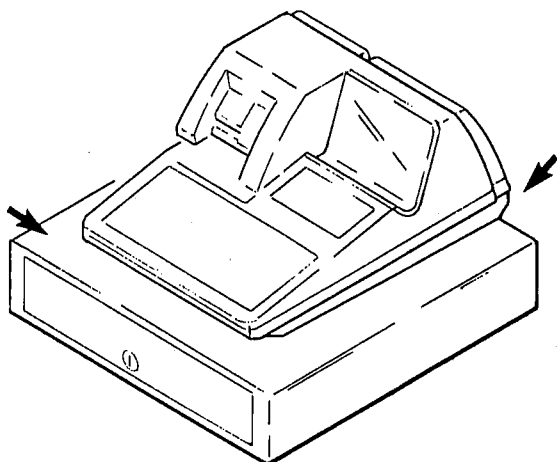
Execute Job #903-B in the SRV mode and enter one of numbers, 2, 3, 6, or 7.

903 → . → @/FOR → A, B, C, D → CA/AT
2, 3, 6, 7

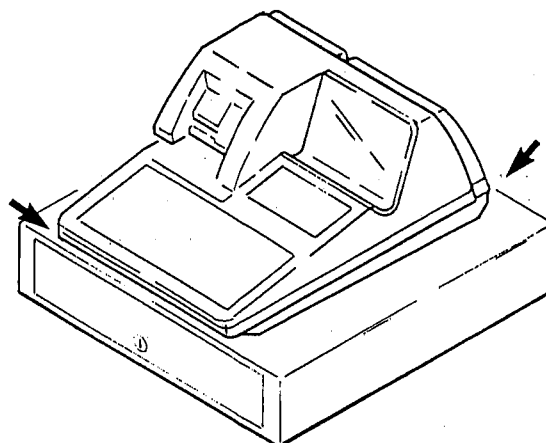
9-5. Changing drawer position

It is possible for the ER3100 to change drawer position.

It had been factory installed that the back of the ER3100 extends beyond the drawer. (Fig. 9-12)

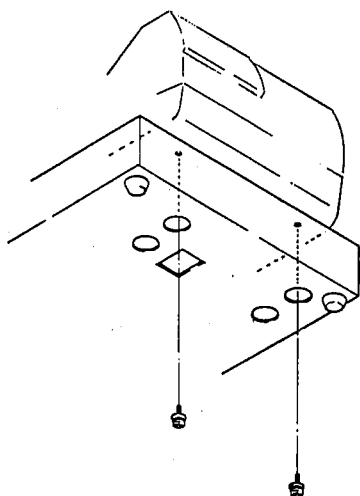


(Fig. 9-12)



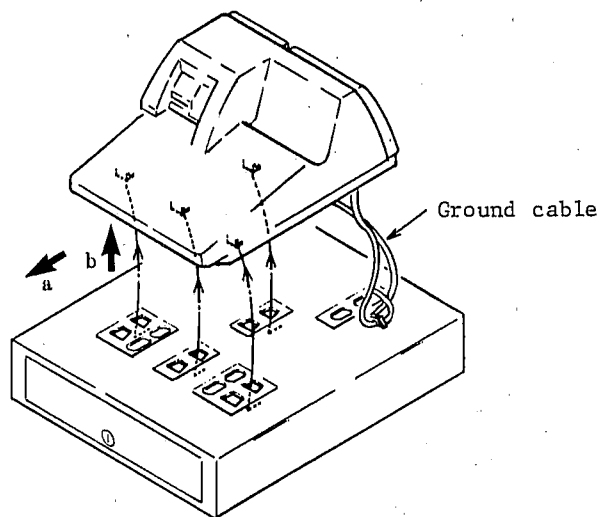
(Fig. 9-13)

- 1) Remove two screws from the bottom of the drawer (Fig. 9-14).



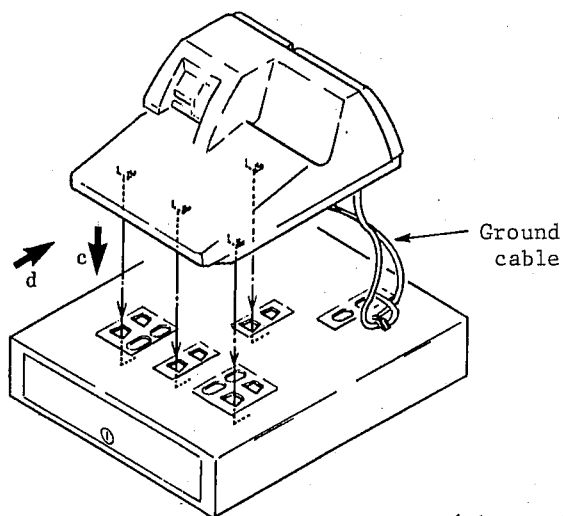
(Fig. 9-14)

- 2) Move the cash register towards the front (arrowhead a) and lift it up (arrowhead b).



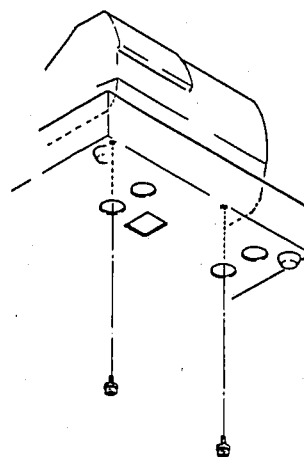
(Fig. 9-15)

- 3) Insert studs under the bottom plate in the holes of the drawer (arrowhead c) and move the cash register towards the rear (arrowhead d).



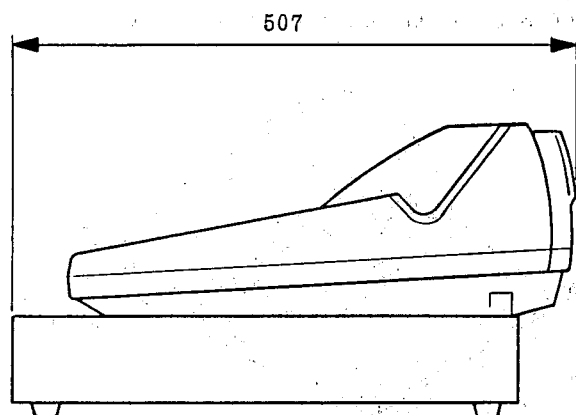
(Fig. 9-16)

- 4) Secure the front side of the drawer with the two screws removed at 1). (Fig. 9-17)

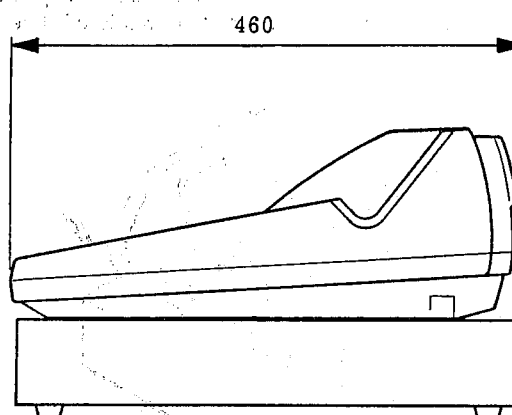


(Fig. 9-17)

5) With this, the dept changes from 507mm to 460mm which become 47mm shorter (Figs. 9-18 and 9-19).



(Fig. 9-18)

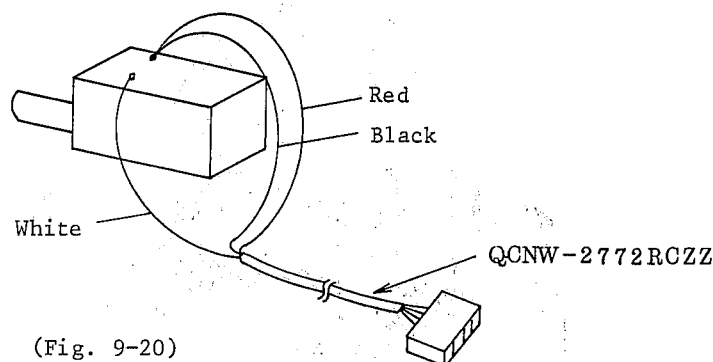


(Fig. 9-19)

9-6. Separately installing the drawer from the register

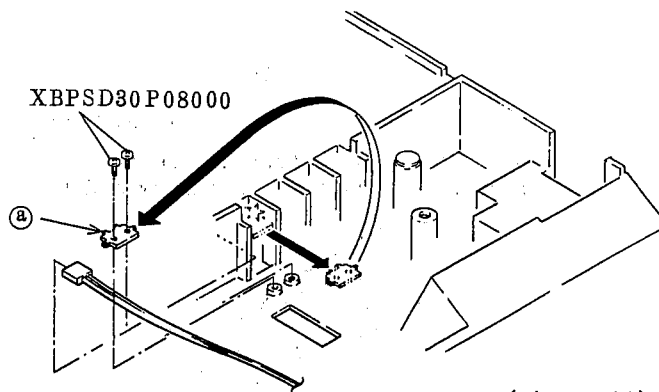
To install the register separately from the drawer, the ground cables in Figs. D and E must be removed. The ER34DW3, etc., may be used as a separate drawer. If the drawer of the register is to be used, the drawer cable must be replaced by the 5m long cable (QCNW-2772RCZZ) because the standard cable may not be long enough.

This extension cable is a 3-wire cable. The black wire must be soldered together with the red wire.



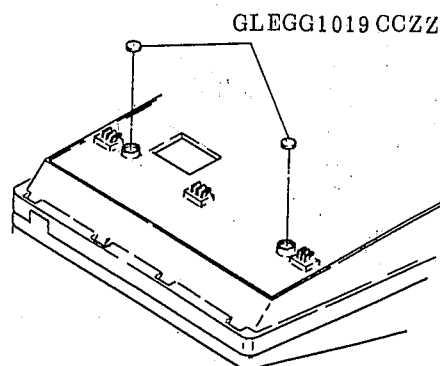
(Fig. 9-20)

The 3-pin side of the QCNW-2772RCZZ connector must be connected to the drawer connector of the ER3100. Remove from the bottom cabinet the plastic cover (a) under the drawer connection slot use it for a strain relief.



(Fig. 9-21)

Two rubber footings (GLEGG1019CCZZ) must be installed under the bottom cabinet to hold the register stable.



(Fig. 9-22)